



Summer 2021

Volume 29, Number 2



Lion Daalders of Zutphen
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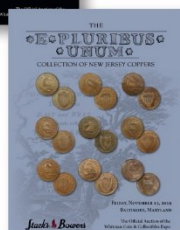
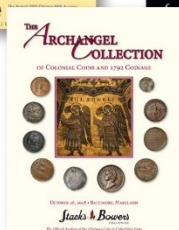
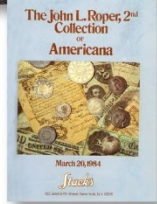
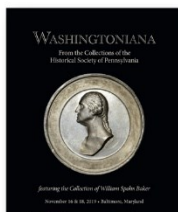
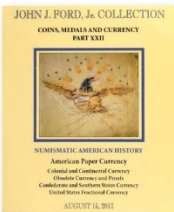
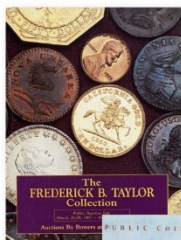
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Survey and Evaluation of 1787 Connecticut Copper Weights
Announcements and Errata
Classified, Sponsor and Reciprocal Club Ads

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Sold for \$440,625



1787 Connecticut Copper. Miller 1.2-mm, W-2730. Rarity-7. Muttonhead. Fine-15.
From Collection SLT.
Sold for \$109,250



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From the William Spohn Baker Collection at the Historical Society of Pennsylvania.
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The C4 Newsletter

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Membership questions, address changes, and dues should be sent to Charlie Rohrer at P.O. Box 25, Mountville, PA 17554. Dues are \$30 regular (including 1st class mailing of the *Newsletter within the US*) and \$40 (for 1st class mailing outside the US); \$10 for junior members (under 18 residing in the US) and \$15 (under 19 residing outside the US.)



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PRESIDENT'S CORNER

(Craig McDonald)

Welcome to the Summer 2021 issue of the C4 Newsletter.

As this Newsletter goes to press, the 2021 Whitman Winter Coin Show is still currently scheduled for November 18 through 20 in Baltimore. We are keeping our fingers crossed that they will be allowed to hold the show and that we will be able to hold our Convention in conjunction. Various members are working diligently to pull together the various activities and presentations.

The ANA show scheduled for August in Rosemont, IL is also a go! Hopefully this resumption of coin shows will continue as the pandemic situation appears to be improving as more locations reopen. Our fingers are crossed that this trend continues and the Whitman Winter Show can be held in November.

Along these lines, we are again working with Lianna Spurrier to live stream and record all the presentations and meetings for those members who might not be able to attend in person. Keep checking the C4 website for information as things unfold. Stack's Bowers has announced that the Colonial session of the auction will present the Norman G. Peters Collection of New Jersey and Connecticut coppers.

As I type this, in mid-June, the new book on Connecticut Coppers by C4 member Randy Clark is at the printer and should be available by the time you read these words. This 700+ page masterwork will be available from both Charlie Davis and Dave Fanning. Randy's book is the thirteenth publication in which C4 has been involved in bringing to print. Keep checking the PUBLICATIONS page of the C4 website for ordering information.

Further into the Newsletter is an article announcing the awarding of an Honorary Lifetime Membership to C4 member Philip Mossman, M.D.. Besides the numerous books Phil has published on his own, he has helped with editing of just about every book C4 has published. Check out the article for more details on the well deserved award.

If there is ever anything you wish to bring to your Club's officers' attention, do not hesitate to reach out to your respective Regional Representative, or your VP or President. Everyone's contact information is in the front of each Newsletter, and on the website.

Enjoy the Newsletter!!

Craig

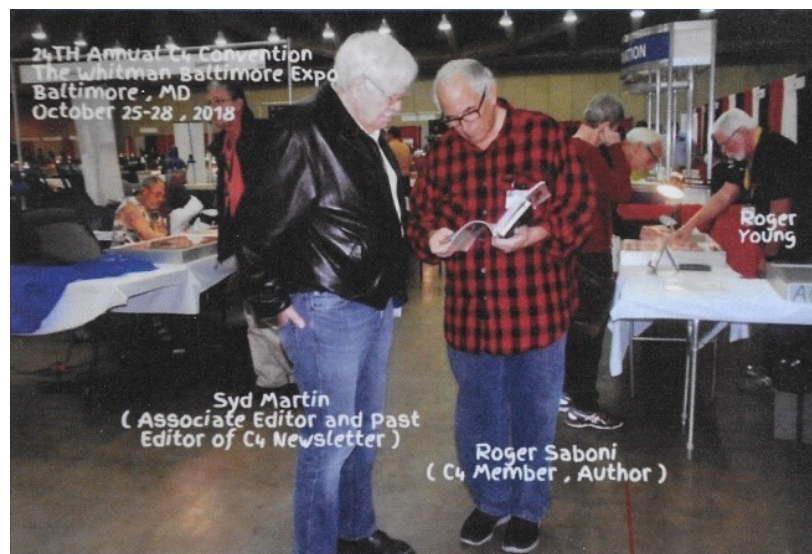


EDITOR'S NOTES

Your editor periodically has the privilege and duty of sharing news about the C4 Newsletter itself. Sometimes that news is good and sometimes, not so good. First, the not so good:

- David Gladfelter notes that your editor omitted two scans that should have appeared on page 17 of the Winter 2020 issue, in his article, "Clues About the Rhode Island Reprints of 1750 and 1755." A supplemental insert, page 16A is provided, following page 78 of this issue.
- Ray Williams noted that the photograph below, submitted as a remembrance of Syd Martin, contains two errors: Roger Siboni's name is misspelled and Jack Young is incorrectly identified as Roger Young. Ray also notes that Clem Schettino can be seen in the background.

Your editor apologizes for both oversights.



Now, the good news...Your editor is thrilled that Mark Vitunic has agreed to help out with editing the newsletter! Mark is an advanced collector and researcher of early American coins and a superb author (e.g., See his recent article on Chalmers iconography.) He's already made a significant contribution with this issue. We are still "negotiating" over exactly what "job title" he is willing to accept and will add his name to the banner above, when that has been worked out. Welcome, Mark, and THANK YOU!

STATEMENT FROM THE C4 BOARD

The Spring 2021 issue of the C4 Newsletter (C4N) included a letter from Richard August and Ed Sarrafian entitled “Re: Pioneering Research on Machin’s Mills” (the Letter). The Letter praises the recently published C4 book *The History and Coinage of Machin’s Mills* (the Book) by Jack Howes, James Rosen, and Gary Trudgen as “a very good book,” and states that August and Sarrafian published two papers on the topic of the Machin’s Mills coinage in the Spring 1998 issue of C4N, the first being a recap of a talk given the previous year titled “Thomas Machin, James Atlee and Abel Buell,” and the other “Machin’s Mills Coins: Condition Census, Die States, Discoveries and Estimated Rarities by Grade.” The Letter goes on to make several claims, including that “the only difference” between August and Sarrafian’s discovery list and the information in a discovery list on page 88 of the Book “is that the new book lists the discoveries in order by die variety sequence. And the book lists the two new discoveries post-1977.” The Letter’s authors also claim that the rarity scale on page 89 of the Book is “very similar” to the one published by them in 1998.

As a result of these and other claims, which type of claims C4 takes very seriously, C4 formed an ad hoc committee consisting of C4 President Craig McDonald, C4 National Vice-President Christopher McDowell, Esq., Publications Committee Chairman Dr. David Menchell, and C4 Board Members Michael Wierzba and James Glickman, Esq. (the Committee). The Committee’s purpose was to fairly, thoroughly, and accurately investigate the assertions outlined in the Letter to determine whether or not the Book failed to give adequate credit to August and Sarrafian’s work as claimed in the Letter. To this end, the Committee reviewed the pertinent research published in the area of the Machin’s Mills coinage. Both of the August/Sarrafian 1998 articles were reviewed and compared to the Book in light of the overall body of research in this field of numismatics. After a careful review, it is the unanimous conclusion of the Committee that the Book represents the original research of the authors, and the authors did not fail to adequately credit August’s and Sarrafian’s work as the Letter claims. Each member of the Committee independently reached this conclusion, and the Committee’s findings have been adopted by the C4 Board.

The Committee’s findings are as follows:

- 1) Gary Trudgen published at least nine articles on the topic of Machin’s Mills coinage prior to 1997, along with several additional articles post-1997. Trudgen’s first article touching on the topic of Machin’s Mills coinage appeared in 1983 and his most recent in 2018. Howes has published extensively in the area as well, including a Machin Mills rarity table in 2015. Rosen is long-time student of the series;
- 2) August and Sarrafian’s 1998 research was groundbreaking and important at the time it was published. There has been important research in the field subsequent to 1998;
- 3) The discovery chart in August’s and Sarrafian’s 1998 work has 24 entries. The Book’s discovery chart has 38 entries. Of the 24 entries in the 1998 chart, half, or 12, include names followed by “ca.” and then the date, meaning that the 1998 authors were unsure or unclear of half the discovery dates they provided. At the same time, only 4 of the 38 entries in the Book include “ca.” Three of these entries relate to coins found by Richard August; the fourth relates to the 20-87C variety, believed to have been discovered by

Robert Vlack circa 1955. The Book arranges its discovery chart by Machin's Mills variety number, while the shorter 1998 chart is arranged by discovery date of the coin varieties. The Book credits August for discovering three varieties and Howes with one; however, the variety designation of one of the coins discovered by August has changed. This change is noted in the Book's updated chart. Other information in the Book's chart is also different from the information presented in the 1998 discovery chart. For example, the first entry in the Book's chart on page 88 lists Betts/Vlack as the co-discoverers of the 1-47A with a date of 1886, but the 1998 chart only credits Vlack with a later date of 1962. The same is true for the 6-72A. The 5-72A is listed in the 1998 chart as Vlack 1953, but the Book lists this variety as "Betts, Vlack 1886." The 19-87C and 17-87B varieties listed in the 1998 chart show Vlack as having discovered them in 1954 and 1953, but the Book lists Betts as discovering them in 1886 and does not mention Vlack at all. The 1998 article lists a 14-84A variety and a 20-87 VT variety, but these varieties are missing from the Book's chart as they have been delisted as Machin's. The Book's authors independently investigated the accuracy of the information contained in their discovery chart. Information concerning each of the discovery dates is generally available in the numismatic literature separate and apart from the 1998 chart. Information relating to when various Machin's Mills varieties were discovered can be found in the published works of Betts, Vlack, and Bowers in addition to the pages of C4N and the Colonial Newsletter available over the internet. The information is also common knowledge to experts within the narrow field of Machin's Mills coinage. There are other differences between the charts, but these details were sufficient for the Committee to determine that the assertion in the Letter that "the only difference" between August and Sarrafian's discovery list and the information on page 88 of the Book "is that the new book lists the discoveries in order by die variety sequence. And the book lists the two new discoveries post-1977," is unsupported. The Committee found that the discovery chart on page 88 contained original research and represented an advancement and correction over the 1998 chart;

- 4) August is credited and cited throughout the Book. Specifically, on the "Acknowledgments" page at iii, the Book's authors state, "Richard August helped immensely with the coin listings. His vast experience and knowledge with all aspects of these coins was invaluable and late night calls often elucidated issues that might have taken months to ferret out." August is also listed in the Book's Bibliography and Index;
- 5) The Book's Machin's Mills estimated rarity chart on page 89 is substantially different from the rarity chart published in 1998. Not only does the Book's rarity chart include many new listings, but the rarity ratings are entirely new and up to date. The concept of an estimated rarity chart is not, in the Committee's judgment, the intellectual property of any one person, and all authors are free to gather data and publish such a chart. Both Howes and August published updated and different rarity charts in the Spring 2015 issue of C4N. The Committee views Howes' and August's rarity charts as competing or rival charts, not companion or similar charts, and views the information contained in the Book's rarity chart on page 89 as having been independently derived by the authors of that work based on years of careful study and research. At the same time, August's estimated rarity chart represents his separate, independent, and unique research and opinions. Although the Committee saw no need for the Book's authors to

cite August's prior estimated rarity research, the Committee observed that the Book states on page 99 that "[t]his concept of rarity by grade regarding counterfeit and imitation halfpence as well as other pre-federal and federal coinage is discussed in detail by Richard August." This credit to August within the Book's text is followed by a footnote citation to Mr. August's 2015 published estimated rarity chart research rather than the older 1998 chart; however, nowhere in the Book was August's work in the area of estimated rarity actually set forth. The Committee overwhelmingly determined that the credit provided on page 99 and footnote 90 of the Book was more than sufficient attribution to Mr. August's historical work in the field of Machin's Mills rarity listings;

- 6) The remainder of the claims made in the Letter are matters that experienced colonial coin experts may observe by examining the coins;
- 7) The C4 Board wishes to express that there is no doubt that August and Sarrafian are noted and respected researchers and numismatists in the field of Machin's Mills coinage (and otherwise), whose work has been important to the development of this area, and nothing in the Committee's findings is to the contrary. The Committee has strictly looked into the claims made in the Letter, and the Committee has attempted to do so with respect for the work of all parties concerned.

The C4 Board unanimously stands behind and supports the findings of the Committee concerning the claims made in the Letter.



THE JOURNAL OF EARLY AMERICAN NUMISMATICS

The Journal of Early American Numismatics (JEAN) is a research journal based on the former *Colonial Newsletter (CNL)* dedicated to the study of early American numismatics. Founded in 1960, *CNL* continuously published some of the most scholarly and seminal studies in this area of numismatics. Focusing on the study of the coinages produced by the states during the Confederation period of the United States, *CNL* also investigated a variety of other specie that the U.S.'s forefathers used in their daily lives. *JEAN* expands the focus of *CNL* with contributions on numismatics of all the Americas during the same time period covered by *CNL* and is published as a bound scholarly journal twice a year in June and December. In 2019, *JEAN* received a Numismatic Literary Guild award, and in 2020 it received the following awards: Best Feature Article on Early American Coins: "The Authentic Fugio Restrike Dies" by Christopher McDowell and Julia Casey; Best Feature Article on Numismatic History or Personalities: "John J. Ford: A Life in Three Portraits" by Q David Bowers, and the James L. Miller Memorial Award for Article of the Year: "The Authentic Fugio Restrike Dies" by Christopher McDowell and Julia Casey.

Issues of *JEAN* normally run around 200 pages or more and contain articles on a variety of American Colonial numismatic topics. The June issue will contain extensive research on a number of topics including the Continental dollar, the Vermont coinage, and Evasion coppers. Since 1960, almost every major advance in our understanding of the history of colonial numismatics has appeared in *CNL*. The June 2021 issue of *JEAN* continues this tradition with major articles completely rewriting our understanding of several coinages.

Subscribe to *CNL*: <http://numismatics.org/store/cnl/>. \$65 per year for ANS members and \$85 for non-members. Contact Christopher R. McDowell, at crmcowell@strausstroy.com for additional information. Please note that *JEAN* has a zero-tolerance policy for plagiarism and will not publish articles that include items currently in (or currently being prepared for) commerce.



C4 AWARDS HONORARY LIFETIME MEMBERSHIP TO PHILIP L. MOSSMAN, M. D.

(Craig McDonald)

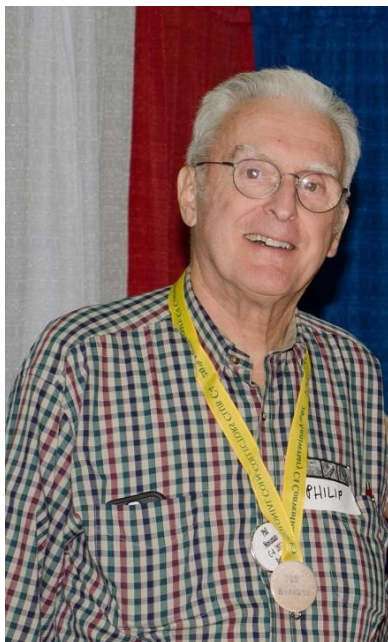
I am pleased to announce that the C4 Board has awarded Philip L. Mossman, M. D. (Phil) an Honorary Lifetime Membership. This is only the fourth such award to be bestowed since C4 was founded in 1993.

As many of you are undoubtedly aware, Phil has published innumerable papers and books on a myriad of topics related to the field of Colonial Numismatics.

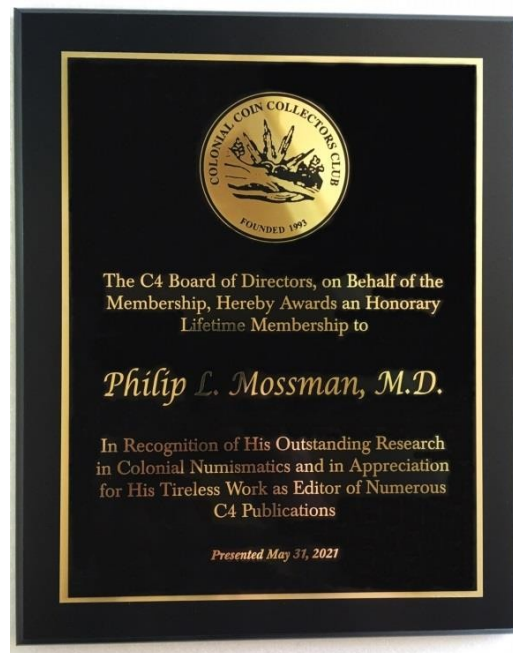
In addition, Phil has served as Editor for almost all of the books that C4 has published. His wide range of knowledge on just about all topics related to Colonials has allowed him to perform this service, regardless of the topic at hand.

Each individual that I spoke with who has worked with Phil in just about any capacity had absolutely nothing but the highest regards for his contributions in working with him.

So on behalf of the C4 Board and the entire membership, again, thank you Phil for your lifetime of research, study, and publication in the field of Colonial numismatics.



Phil at the 2015 C4 Convention



Honorary Lifetime Membership Award



30TH ANNIVERSARY NJ COPPER SYMPOSIUM HELD ONLINE APRIL 24, 2021

(Ray Williams)

The First NJ Copper Symposium was held in Wayne, NJ on April 20th, 1991. It was a gathering of NJ Copper enthusiasts to create fellowship and share information. John Griffie had insisted that I attend after I had provided him with the provenance of his Maris 77-dd. I was just an observer in the room, having little knowledge about NJ Coppers, but this event got me hooked.

John Lorenzo provided a room for the event at his office. He also handed out worksheets that consisted of one page for each NJ variety with an auction description & picture. If I remember correctly, these pages were mostly from the Garrett NJ auction catalog. I made notes in my copy as I listened to the contributions of the attendees. Rarity estimates and Condition Census were discussed and debated among the more knowledgeable. One variety at a time, these parameters were updated based on auction appearances, known collections, dealer inventories and the gut feelings of those with experience.

I just absorbed as much as I could. I did bring a portable Panasonic cassette recorder and recorded much of the event. I also took a few pictures. Several years later, Roger Siboni took the cassette tapes and transcribed them into a book, along with several of my pictures. The attendees contributing to the bulk of the discussions were Bill Anton, John Griffie, Mike Ringo, and Joel Geoffrey. Bill Anton also brought some handout material – an envelope with a picture of Dr. Maris among other items. He also brought one of the lead plates imitating the Maris Plate using electrotype coins from the Spiro sale.

At the event, I purchased five of John Griffie's duplicates, more than doubling my collection. A week later, April 27, 1991, I attended EAC Boston and purchased another five NJ varieties from Don Mituzas. My collecting days were well along the way – I was addicted! Over the next 15 years, we had several meetings at private residences and about a dozen NJ Copper Symposiums held at C4 Conventions.

Those attending the First NJ Copper Symposium were:

Bill Anton	John Griffie	Mike Ringo
Gino DiTogni	Frank Jozapaitis	Don Scarinci
John Dikun	John Lorenzo	Frank Steimle
Elliott Durann	George Lyman	Dennis Wierzba
Joel Geoffrey	Spencer Peck	Ray Williams

Fast forward 30 years and here we are – 2021. What a ride it has been collecting NJ Coppers for three decades! Last year, I discussed with Roger Siboni the possibility of a 30th Anniversary New Jersey Copper Symposium and he agreed it was a great idea. All my ideas are great! LOL. Being that the actual April 20th anniversary date was in the middle of the week, we decided to hold it on the following Saturday, April 24th. A noon Eastern time was chosen because we didn't know how long it would last, and 9:00 AM Pacific time shouldn't be too early.

Notices were placed in the C4 Newsletter, Penny Wise, and online chat groups. About 45 people signed up to receive the information to attend the Zoom meeting, and 22 collectors actually attended. Those that didn't attend are "dead to me"! Only kidding, but they did miss a fun time.

The Symposium started on time. As meeting host, I greeted everyone present, talked a little about the first symposium and explained how we planned to run the event that day. Typical of C4 and EAC events, everyone had a turn to introduce themselves. During their introductions, if they had images to share, questions to ask or information, that was when it was done. I started first to show an example, of how to do it. After introducing myself, I shared images of the largest diameter NJ Copper known, a NJ copper made into a seal, the Maris Plate 23-R, and my favorite Maris 3-C. Roger Siboni was next and it continued through all present until Buell Ish was the final attendee to share.

There were then three presentations by the authors of the NJ Copper book. Jack Howes shared information about the Goadsby papers he discovered about a decade ago and has been transcribing. Buell Ish displayed and talked about the Maris Receipt recently archived on the Newman Numismatic Portal, giving insights to how auctions were handled at the time and specifically how Maris was involved in the auction of his collection. Roger Siboni ended the event with a discussion about Painted Die Varieties – NJ Coppers that had Maris or Crosby die varieties painted or drawn in the field of the coins. Some of these can be associated with specific collectors and collections. Those attending the 30th Anniversary NJ Copper Symposium were:

Al Boka
Bob Bransfield
David Fanning
Jim Glickman
Don Hartman
Jack Howes
Dale Isaac
Buell Ish

Frank Jozapaitis
Eric Li Cheung
Jeff Lipsky
Len Massa
Bill Mitchell
Mitch Mitchell
Roger Moore

Darwin Palmer
Jeff Rock
Roger Siboni
Bruce Smith
Frank Stillinger
Frank Weisensee
Dennis Wierzba
Ray Williams

The 2 ½ hour event is now history. I wonder if others will talk about this event, in 30 years, like we now reminisce about the one 30 years ago. Thank you to all who attended and contributed to make the event a success. One of the participants asked about having a NJ Copper gathering at the upcoming C4 Convention. Let's see if we can make it happen.



Screen shot
during the
Symposium.

THE LION DAALDERS OF ZUTPHEN

(Jeff Lipsky)

The Lion Daalder was the principle trade coin of the Netherlands minted from 1575 until 1713. The coin saw extensive use in the British colonies in North America that later became the United States.¹ Lion Daalders were issued by the provinces of Frisia, Gelderland, Holland, Overijssel, Utrecht, and Zeeland, by the region of West Frisia, and by the cities of Deventer, Kampen, Nijmegen, Zutphen, and Zwolle.² Since these coins were an integral part of commerce in the colonies that later became the United States they are avidly collected by colonial coin collectors. One popular way to collect these coins is by issuing entity listed above.

Delmonte lists in detail the mints and years that Lion Daalders were produced. The rarest are from Zutphen. Zutphen issued Lion Daalders in 1690, 1691, and 1692. He lists the coinage for the years 1691 and 1692 as R-4 and for 1690 he lists only a double-weight piedfort located in the Teylers Museum³. R-4 in Delmonte's book from 1967 means extremely rare: only 2 or 3 specimens.⁴ Until the Schulman, b.V. Auction #367 in June of 2021 I had never seen a Zutphen Lion Daalder for sale or even an image of one. Lot number 291 of this sale was a 1690 Zutphen Lion Daalder (images at right). According to the auction description there are three known for this year: one in the Zutphen Museum, another in private hands, and the one offered in the sale. The description also mentions the small ligature in ZVTPHANI⁵ that matches that of the Teylers Museum piece.



Schulman has maintained extensive records of all the coins they have handled since 1880. I emailed Schulman and asked for information on the 1691 and 1692 Zutphen Lion Daalders. Tim Poelman of Schulman responded stating that according to their records for 1691 there were at least two in private hands, and another one being registered as “seen in collection 18/3/1970”, but it is not known if this is one of the two already mentioned pieces or a third example. For 1692 Mr. Poelman reports at least four in private hands and one in the National Numismatic Collection.⁵ For collectors of Lion Daalders by issuer this means there may be as few as eight or nine Zutphen examples available.



¹ Mossman, Philip L., *Money of the American Colonies and Confederation*, 1993, pp. 65-67.

² University of Notre Dame, Department of Special Collections, “The Coins of the Colonial and Early America”, listed under *The Lion Daalder* on their website.

³ Delmonte, A., *The Silver Benelux*, 1967, pp 193-204.

⁴ Ibid. p.8.

⁵ Private correspondence.

COUNTERFEIT HALFPENNY VLACK 24-72C

(Gary A. Trudgen)



Figure 1: Counterfeit Halfpenny Vlack 24-72C. Photo courtesy of Jack Howes.⁶

Richard (Dick) August discovered this variety, circa 1980. At the time of its discovery, 24-72C was thought to be part of the large grouping of unauthorized British halfpence that were considered American-made and of which many were attributed to the mint at Machin's Mills near Newburgh, New York. In a personal letter to the author, dated April 23, 1982, Dick summed up his discovery as follows:

1772?3 unlisted coin. [Bob] Vlack has seen the coin and both he and I think it is a Machins or at the very least American because: 1. the small planchet, 2. the small lettering like Machins, 3. the branch hand design, 4. The mailed bust armor of a type not found on anything but Machin's, 5. the wreath and hair which is very delicate, 6. the purposeful grinding of the obverse die to simulate wear (as other Machin's are just not deeply engraved) and avoid detection as light weight frauds, 7. this was found in NY as was my own.

Previously, Bob Vlack had published photo plates in 1964 and 1974 of unauthorized British halfpence believed to have been made in America and he also created an attribution system that is in use today.⁷ Thus, obtaining Bob's blessing was a significant step forward in determining 24-72C to be not only an American-made coin but also a likely addition to the large group of unauthorized halfpence called Machins.

Dick's discovery coin was announced by this author in the June 1985 issue (page 908) of *The Colonial Newsletter* and assigned a Vlack attribution label. Upon further study of the large assembly of unauthorized British halfpence called Machins, this author broke them into groups and

⁶ The author would like to thank Jack Howes for sharing his large collection of 24-72C photos.

⁷ Bob Vlack pioneered the modern-day study of American-made British halfpence. Dick August was one of his students in this field of study.

assigned minting locations to each of the groups.⁸ Vlack 24-72C clearly fell into what is labeled Group 1 and is believed today to have been minted at a clandestine mint located in Samuel Atlee's porter brewery that was located along the eastern shore of the Hudson River, just north of New York City.⁹

The dies that were used to strike 24-72C are currently not found in other die marriages. Die linkage within a group of coins is the strongest evidence that a group of coins were made at the same mint. Since the dies that were used to strike 24-72C were not used in other die marriages within Group 1 or elsewhere, linkage to Group 1 varieties is dependent upon two other methods that are not as strong evidence as *die linkage*. These methods are *punch linkage* and *style linkage*, the former being stronger than the latter. Dick August, in his above summary, used *style linkage* to tie 24-72C into the group of halfpence called Machins.

Recently, however, in a letter to the editor which was published in the Spring 2021 issue of the *C4 Newsletter*, Dick wrote "For what it is worth we (Richard August and Ed Sarrafian) no longer believe that 1772 Vlack 24-72C is a Machin's or Atlee brewery mint product of New York city. We do believe it is most likely an American product." No justification is given for this apparent change of opinion.

In the author's study of the obverse dies used to strike the Group 1 halfpence, it was noted that a very distinctive "S" punch was used in the legend of obverses 3 through 7. It has a large lower serif that points directly to its midsection. In addition, the midsection bulges slightly downward toward the lower serif, almost touching it. The obverse die of 24-72C appears to have been lapped or ground down as stated by Dick in his summary but not to simulate wear as he indicated but rather to bring up more detail in the central device effigy on the struck coins. This would have been done if the central area of the die had buckled or sunk during its initial use, due to inadequate hardening, with the possible intention of re-punching the legend, but that was never done. The lapping removed most of the letters in the legend GEORGIVS III REX. However, portions of some of the letters remained after lapping because some were impressed more deeply into the die than others, plus some were driven into the die face slightly out of vertical. The distinctive "S" punch was one of the letters that was not completely removed when the die was lapped. Well struck and preserved specimens of 24-72C show a portion of the left side of the letter "S" (Fig. 2.) A comparison of the incomplete "S" found on Vlack 24 to that of Vlack 6 appears to show that they are from the same punch.¹⁰

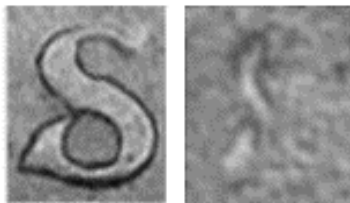


Figure 2: The letter "S" on Vlack 6 (left) versus the partial letter "S" on Vlack 24 (right.) They seem to have been made by the same letter punch.

⁸ Trudgen, Gary A., "James Atlee's Imitation British Halfpence," *The Colonial Newsletter*, Serial Number 75, March 1987.

⁹ Trudgen, Gary A., "Samuel Atlee's New York City Brewery and Mint," *The Journal of Early American Numismatics*, Volume 1, No. 2, December 2018. The Group 1 halfpence include: Vlack 2-71A, 3-71B, 4-71C, 4-71D, 5-72A, 6-72A, 7-72B, 24-72C, 3-74A, 5-74A, 7-74A, 4-75A, 6-76A, and 9-76B.

¹⁰ Punch linkage can be controversial when assigning heritage to a coin since more than one identical punch may have been made from the same matrix. But when used with other evidence it can add support to a theory.

If the letter punches found on the reverse die of 24-72C are the same as those used to prepare a different reverse die that is married to an obverse die produced with the distinctive “S” punch, this would lend support to the preceding conclusion that Vlack 24 was most likely produced using the distinct “S” punch. A comparison of the letters comprising the reverse legend BRITANNIA follows, taken from a high grade 6-72A from Group 1 and a well preserved 24-72C (Fig. 3.)



Figure 3: Reverse legend letter comparison from Vlack 72A (left) and Vlack 72C (right) reverse dies. The images of the reverse dies were set to the same diameter for this study.

Legend letters can appear slightly different on struck coins even though the same puncheons were used in the preparation of different dies. Letter and numeral puncheons were tapered to strengthen the punch and to allow the displaced metal to rise above the die face when the punch was driven into the die. After the legend and date were applied to a die, the displaced metal was lapped off. Even if the same punch was used on two different dies, the resultant intaglio image of the punch could vary dependent upon how deeply the punch was driven into the die face and also at what angle. Ideally the punch should be driven into the die vertically or at right angles to the die face. Also, when multiple coins are struck from the same die, the resultant letters and numerals can appear differently on the struck coins because the coins were struck without retaining collars. The resulting images on the coin are dependent upon how well the copper blanks or planchets were annealed prior to striking and how much force was applied to the blank when struck. During this period in our history, coinage screw presses were manually operated and the amount of force was dependent upon how energetically the men swung the lever arm.

When comparing letters struck from different dies that were prepared with the same puncheons, it cannot be expected that they will be an exact match.¹¹ If the letters are nearly the same size and are composed of the same shaped strokes and serifs, then it is likely they were created with the same puncheon or a puncheon that came from the same matrix. When comparing the letters shown in Figure 3, it can be seen that like letters are the same shape and are composed of the same strokes and serifs indicating the dies were fabricated by the same engraver. Sometimes, if an engraver did not have a needed letter he would punch in a similar letter into the face of the die and then hand engrave the necessary missing elements to make a new letter. This is frequently seen where the letter “P” was transformed into an “R” or the letter “C” into a “G.” One possible example of this practice seen in this comparison is the letter “T” where the engraver made up a “T” by first punching an “I” and then manually engraving the upper horizontal stroke and finally punching in the triangular serifs at the end of the horizontal stroke. Note also that some of the letters from the 72C die show bifurcation which occurs when the radial flow of the metal during striking fails to completely fill the inline strokes of certain letters.¹² This can occur when retaining collars are not used because the metal flow expands the planchet diameter instead of filling the cavities of the design elements located along the circumference of the die.

¹¹ Comparison of coin legends and dates through the use of photographic images introduces more uncertainty to the analysis if the same camera and setup were not used to take the images.

¹² Trudgen, Gary A., “Understanding Bifurcation on Coin Legends,” *The C4 Newsletter*, Vol. 26, No. 2, summer 2018.

Because the reverse die legend letters of 24-72C are a close match to those of the 72A die from Group 1, it suggests that the partial “S” on the obverse die is indeed the distinctive “S” punch found on several Group 1 varieties. Therefore, two methods of analysis support the inclusion of 24-72C in the group of counterfeit halfpence attributed to Samuel Atlee’s brewery mint. The two methods are the preceding *punch linkage* study and Dick August’s *style linkage* claims that the branch hand design, the mailed bust armor, and the delicate wreath and hair which are found on 24-72C match those same characteristics in the group of halfpence he called Machins. Also, a characteristic of the Group 1 dies was the use of unfimbriated (no outlines) crosses in the British Union Jack within the shield. The crosses in the Group 1 halfpence often do not show because they were engraved too deeply into the die and seldom strike up. This is the same situation with the 72C die; the crosses most often do not show on the struck coins but when they are faintly visible it appears they are unfimbriated providing further confirmation that 24-72C is a Group 1 halfpenny.

One design element that does differ between the 24-72C and the Group 1 dies are the dentils. Both dentils are sawtooth in shape but the 24-72C dentils are about half the size of those found on other Group 1 dies (Fig. 4). The triangular dentils found on the 72C die are approximately the same size as the triangular punch that may have been used to fabricate the letter “T” in the reverse legend (Fig. 5.)



Figure 4: Comparison of the dentils found on the 72C reverse die and the Group 1 obverse 6 die. Both images are scaled to the same size.



Figure 5: Comparison of the 72C die dentils to the letter “T”. Both images are from the same coin and at the same scale.

Both 24-72C dies saw limited use due to early problems which may explain why neither die has been found married to another die. The obverse die quickly buckled or sank in its center and was lapped, removing most of the legend. The reverse die also sank, but in the area of the date, weakening the final two digits of the date. A comparison of the date for 72A and 72C shows similar styled numerals for both dies along with the buckled area on the 72C die (Fig. 6). The coiners did not attempt to repair the reverse die and it was neglected resulting in severe rust and spalling during its continued use (See Fig. 1.)



Figure 6: A comparison of the date numerals for the Vlack 72A and 72C dies. The top row shows the date area from two 24-72C specimens while the bottom image is from a high grade 6-72A coin. The top image on the left is from a middle die state, high grade coin while the top image on the right is from an earlier die state, low grade coin. Note the similar styled numerals that were used to prepare both of these dies. Also, the top image on the left shows the buckling of the date area in the 72C die.


CONCLUSION

The preceding *punch linkage* study adds support to Dick August's initial 1982 conclusion, which was based on *style linkage*, that 24-72C belongs in the group of American-made halfpence currently attributed to Samuel Atlee's circa 1785 brewery mint. His and Ed Sarrafian's recent retraction of where the coin was fabricated was not supported by any observations and it would be interesting to know why they changed their minds.

ACKNOWLEDGEMENTS

The author would like to thank Jack Howes and Jim Rosen for reviewing this article and offering suggestions for improvement.







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BENJAMIN FRANKLIN FILLING REVEREND WHITEFIELD'S COFFERS WITH COLONIAL COINS

(Patrick McBride)

On the first of June 2021 I was looking for a new history podcast to listen to during a run and stumbled upon “Yale Open Courses- The American Revolution” presented by Professor Joanne B. Freeman.¹ The beginning of the course sets the scene on what it meant to be a British colonist and a British American. I found it to be very interesting and with the perfect amount of denseness to have enough detail to be academically valuable but not so much that I have to repeat to the same 5-minute segments over and over again for the information to sink in.

During the middle of the third installment an interesting quote from Benjamin Franklin particularly grabbed my attention. The segment contained a writing composed by Benjamin Franklin where he describes a sermon he attended by Reverend George Whitefield, a preacher who had immigrated from England and was gaining significant popularity. Reverend Whitefield gave many open-air sermons to large audiences (Franklin states as large as 25,000 people!) and was a major contributor to the “Great Awakening” religious movement in the colonies.² The open-air sermon which Franklin listened to occurred in 1739 Philadelphia around Market and Front streets. Please see Franklin’s reaction to the sermon below:^{1,2}

I happened soon after to attend one of his Sermons, in the Course of which I perceived he intended to finish with a Collection, and I silently resolved he should get nothing from me. I had in my Pocket a Handful of Copper Money, three or four silver Dollars, and five Pistoles [Spanish coins] in Gold. As he proceeded I began to soften, and concluded to give the Coppers. Another Stroke of his Oratory made me asahm'd of that, and determin'd me to give the Silver; and he finish'd so admirably, that I emptied my Pocket wholly into the Collector's Dish. Gold and all.^{1,2}

How awesome it was to hear the mention of colonial coinage by none other than Benjamin Franklin. My mind immediately began to hypothesize what specific coins he likely put in the coffer. There is no mystery to the composition of the gold coins as they are detailed; however, there is some mystery to the specifics of the copper and silver coins. Would have they been likely of foreign (French/Spanish origin)? Since he specifically states silver “dollars” does that rule out that he had NE silver in his pocket? To my knowledge all copper coinage produced on colonial American soil post-dates 1739 as well (with the exception of Higley coppers which I am guessing he likely would have never come across). Whatever the case may be, it was certainly exciting for Benjamin Franklin himself to mention the use of colonial coins in such a colorful manner.



¹ Freeman J. “The American Revolution.” Open Yale Courses. 2011. Accessed June 1 2021.

² National Humanities Center Resource Toolbox. Becoming American: The British Atlantic Colonies, 1690-1763. “Benjamin Franklin on Rev. George Whitefield 1739.” Accessed June 1 2021. <<http://nationalhumanitiescenter.org/pds>>

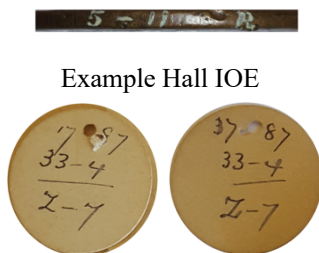
**DR. THOMAS HALL'S
CONNECTICUT COPPERS EPHEMERA**

(Randy Clark)

This article is a request for collectors holding Hall IOE Connecticut coppers to feed back information on the presence of a Hall circular attribution ticket and/or a BGJ coin envelope. I am maintaining a database on the Hall collection and public appearances; an effort started many years ago by Neil Rothschild with help from Robert Martin. Let me explain what I mean by this.

Dr. Thomas Hall (1841-1909), Connecticut coppers researcher and collector, is known for having inked the attribution of his front-line collection on the edge of each coin (known as “ink on edge” or IOE.) He also included a handwritten, circular cardboard attribution ticket with his front line. As one might fear, many of those circular tickets have since been separated from the coins, and an important piece of ephemera is lost.

After his passing, the majority of Hall's collection became part of the holdings of Virgil and Armin Brand, after which, circa 1935, they fell into the inventory of dealer B.G. Johnson ("BGJ", St. Louis Stamp & Coin.) The 352-piece Hall Connecticut coppers inventory was then assigned a numeric identifier, and oversized envelopes with attribution information and brief condition comments were used to house the coins. Again, over time many/most of these BGJ envelopes became separated from the coins.



B.G. Johnson sold Hall coppers directly to Eric Newman, to the ANS, and through the St. Louis Stamp & Coin fixed price lists, but the majority of them went through New Netherlands private sales and auctions. Most of the Hall tickets and BGJ envelopes now known are from these direct sources. For instance, the Heritage Newman sale of May 2014 had the Hall ephemera.

Many of Hall's IOE Connecticut coppers were sold in the Bowers Oechsner sale of September 1988 and the Stacks Hessberg sale of June 1991 ... and it appears the Hall tickets and BGJ envelopes were generally not included with those lots.

When time is available and your coins come out of their hiding places for a friendly visit, please look over your known Hall IOE Connecticut coppers pieces and let me know if you are fortunate enough to have a Hall ticket or BGJ envelope. And, please do not separate that ephemera from the coins when you are ready to pass them on to a new owner ... it's all part of history.

-- Randy Clark [CTCoppersBook@gmail.com]

FROM CANNON TO COIN: PRE-FEDERAL COINAGE PRODUCTION

(James Rosen)

The production of planchets, dies, and coins during the latter part of the Confederation Period, circa 1785 to 1790, has often been associated with misconceptions and misunderstandings within the pre-federal collecting community. In this article, I hope to clarify many of the issues surrounding the production of these coins, from the earliest steps in making the planchets and dies to the stamping of the coins themselves. Authorized mints in our fledgling country at this time were located in Connecticut, New Jersey, Massachusetts, and the Republic of Vermont with “private” mints located in New York City and Newburgh, New York. These mints individually produced large quantities of copper coinage requiring a certain degree of sophistication ranging from producing planchets, fabricating steel dies, and striking coins. Most likely these manufacturing steps involved developing technologies. This article will attempt to describe the methods that are believed to have been used by these early coiners realizing that much that is stated regarding this period of time is speculative, given that primary source documentation is rare and our understanding of the methods involved will be based on second-hand information and the study of the coins themselves. Sadly, there are no known surviving Confederation Era coinage dies to study; however, a Fugio copper hub trial piece, in the negative and incused, discovered in the dawning years of the 20th century by Sylvester S. Crosby, has survived the ages and is useful in bridging the gap between theory and fact.

COPPER PLANCHET PRODUCTION AND ASSOCIATED PROBLEMS

Our discussion begins with the methods employed in the production of copper planchets which are the metal blanks that are made into coins. Anyone familiar with Confederation period coinages is well aware of the fact that all planchets produced during this period were not of the same quality. Much of the information presented herein on the minting process of the coins of this era is taken primarily from *The History and Coinage of Machin’s Mills*.¹ Although one can’t state categorically that the other mints operating at the same time utilized a similar operational schema as occurred at the mint at Machin’s Mills, one can assume that their procedure was not too far removed from what transpired there. As students of this period of coinage, we are fortunate that a description of the coinage operation at Machin’s Mills has been left to us by Dr. Franklin Benjamin Hough, a historian from the Albany, NY, area, who obtained his information from discussions with Thomas Machin’s son, Thomas Jr., circa 1853-54. Thomas Machin, along with five partners, operated a clandestine mint in Newburgh, New York circa 1787-90, primarily producing unauthorized British halfpence, authorized and unauthorized Vermont coppers, counterfeit Connecticut, Massachusetts and New Jersey coppers, and a menagerie of mules.² This material, presented here from Edward Manning Ruttenber’s 1859 *History of the Town of Newburgh*, probably represents the closest thing we have to primary source documentation regarding the

¹ Howes, Jack, James Rosen, Gary Trudgen, *The History and Coinage of Machin’s Mills*, Colonial Coin Collectors Club, 2020.

² “Unauthorized” British Halfpence fall into two categories: those whose date corresponds to one of the Regal Halfpence dates are termed *Counterfeit* and those whose date falls outside the date range of Regal Halfpence are called *Imitation*.

mint's workings at Machin's Mills.³ In addition to the operation at Machin's Mills, there is also good primary source documentation regarding the presence of three mills along the Mill River near the New Haven, Connecticut mint which most likely supplied copper sheets to that mint and possibly planchets as well.⁴

The metallic copper processed by the Machin's Mills mint was derived primarily from cannons, with scrap copper and barrel hoops often recovered from British barrels made to hold gun powder being used possibly as well.⁵ These plentiful barrel hoops, as seen in Figure 1, were already in strip form, thus offering a convenient source of previously refined copper for fabricating planchets. The copper required a large reducing furnace where impurities like zinc floated to the top and were removed. However, other impurities besides zinc are present in copper ore, such as iron, lead, sulfur, and silver, but these were unlikely removed from the copper during smelting.



Figure 1. Pieces of a British gunpowder barrel hoop possibly used to make Confederation Era planchets. Photo courtesy of a private collector.

Thus, many planchets contained varying degrees of impurities which would often lead to differences in color as well as quality of these finished coins. Color variation is also seen in the federal coinage of early cents and half cents, where some coins interacting with their environment are dark brown while others of the same date and denomination are tan. Clearly, there were other sources of copper that were sometimes used as an immediate source of planchets, such as lightweight coins. For example, Nova Constellatio coppers were used quite extensively by Reuben Harmon, Jr. at the Rupert, Vermont coinage operation. A rather extensive list of coins used as host coins during this period of time can be found in Philip L. Mossman's *Money of The American Colonies and Confederation, A Numismatic, Economic and Historical Correlation*.⁶ It is likely, at least at Machin's Mills, that the task of preparing copper ingots was done in another facility and brought to the minting house. Whether or not this facility was owned by the Machin's Mills consortium is unknown but unlikely as there is no mention of it in the Machin's Mills indenture of April 18, 1787.

One only has to look at the Bust Left Vermont coppers and the Bust Right Connecticut coppers to recognize firsthand the problems the early coiners had in producing quality planchets. Planchet defects plagued many early coins, as seen in Figure 2. The copper used for many of the

³ Ruttenber, Edward M., *History of the Town of Newburgh*, E.M. Ruttenber & Co., Printers, Newburgh, NY, 1859.

⁴ Knipe, Jay, "Locating the Copper Works at Hambden, A Step Toward Understanding the Operation of the New Haven Mint," *The C4 Newsletter*, Vol 25, No. 3, pp. 23-31, Fall 2017.

⁵ Goldstein, Erik, Personal communication, Spring 2021.

⁶ Mossman, Philip L., *Money of the American Colonies and Confederation, A Numismatic, Economic & Historical Correlation*, pp. 269-273, The American Numismatic Society, New York, 1993.



Figure 2: A 1785 Connecticut copper Miller 3.3-F.3 on the left and a 1787 Vermont copper Ryder-Richardson 15 on the right, both struck on poorly made planchets. Photos courtesy of Heritage Auctions, *ha.com*.

state and republic (Vermont) coinages was obviously not well processed, leaving areas on the rolled sheets of copper that were not homogeneous, leading to a variety of physical defects on cut out planchets and eventually the coins themselves. Another physical characteristic on many planchets of the Confederation Era was their variable diameter. A small diameter planchet was clearly more problematic than a larger one since the smaller diameter planchet would not show all the details when struck by the larger coinage dies. An example of a small diameter planchet can be seen in the 1788 Connecticut copper Miller 1-I, also known as the 1788 Vermont copper Ryder-Richardson (RR) 39, see Figure 3. To show the issues associated with this small diameter planchet, one only has to look at the obverse of this variety. On many coins of this variety, the

Figure 3: A 1788 Vermont copper RR-39, aka 1788 Connecticut Miller 1-I, struck on a small planchet, with tight obverse legends and no date. This coin also reveals a planchet struck from an obverse buckled die showing a raised linear area on the left obverse and a depressed area in the central reverse, both issues being discussed later in the article. Note the large area above the effigy's head, not uncommonly seen in this variety, suggesting poor centering of the reverse die. *Note: this reverse, at*

first examination, may not look exactly like the Vermont Bressett U in that there does not appear to be the correct relationship of the hand to the D; however, there is really no hand showing (possibly lapped out) but the cross after the letter E confirms that this is either Bressett reverse T or U, as these are the only reverses in the Vermont series with such an ornamentation (cross) in this position and obviously this coin is not a RR-26. Photos courtesy of Heritage Auctions, *ha.com*.



obverse legends are so tight to the rim that letters frequently lose their tops. It is suspected that the last Connecticut copper coined was the unauthorized 1788 Miller 1-I, struck at Machin's Mills, since it is obvious that large quantities of these scrap planchets were struck with any functional dies that were immediately available and then the coins were quickly thrust into circulation before word of the Coppers Panic infiltrated the wheels of commerce.⁷ It is thus uncommon to find this variety with full legends. Regarding the reverse of this coin, the date is rarely full, the bottom half is almost always not seen; however, a large area above the effigy's head is present, suggesting that the reverse die was not well aligned with the obverse die in the press. Theoretically, one could propose that the planchets were not centered properly on the fixed lower die but if that were the case, one would not see so many specimens with these same exact spatial issues as seen in Figure

⁷ Rock, Jeff, Personal communication, Spring 2021.

3. Thus, it is likely that in some situations both the size of the planchet and its centering between the dies can determine what is seen in the final outcome of the coin, with the RR-39 being a case in point. Another unusual feature of this variety is the odd shape, probably a result of being cut from either a malfunctioning planchet cutter, or being cut by hand.

It appears that it may have been a lack of experience and technology with certain state, republic, and clandestine mints that was most responsible for the poor quality planchets. If one looks at the high quality emissions from New York City, such as the Nova Eborac coppers produced by John Bailey, and those state coppers struck by the Massachusetts mint, one can quickly see contrasting quality with many of the planchets from the early Vermont and Connecticut mints. See Figure 4 and contrast it with Figures 2 and 3.



Figure 4: A Massachusetts copper cent and a Nova Eborac copper, both on high quality planchets, something one almost never sees on a Vermont copper RR-15. Photos courtesy of Heritage Auctions, *ha.com*.

The copper ingots probably arrived from local shops, as it is unlikely that Machin's Mills had the space and equipment to produce copper ingots from raw copper. The same situation certainly may have applied to other Confederation Era mints. Once the ingots arrived at their desired location, they were softened by annealing; a process of heating the copper to redness and cooling it very slowly. The number of times that the copper ingots had to be annealed was probably dependent on a number of factors, such as the thickness of the ingot, the purity of the copper, and how thin one wanted the sheets. Once softened, the ingots were rolled out to a specific thickness (which certainly was somewhat variable) using a pair of cast iron rollers, such as seen in Figure 5. The rollers were adjustable so that the required thickness of the copper sheets could be obtained. At Machin's Mills, the copper sheets were roughly one to two feet wide, according to Thomas Machin, Jr., and had to be reannealed after a few passes through the rollers since the process of rolling out the ingots hardened the copper.⁸

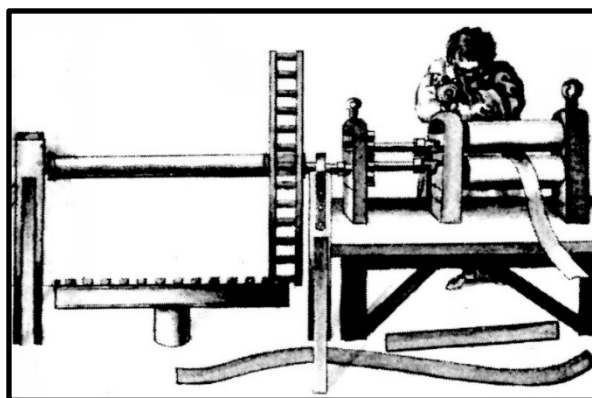


Figure 5: Samuel Thompson's Rolling Mill as illustrated in his 1783 *An Essay on Coining*. The large vertical shaft that enters the floor in the illustration was connected to a waterwheel or horse mill.

⁸ *The History and Coinage of Machin's Mills*, pg. 62.

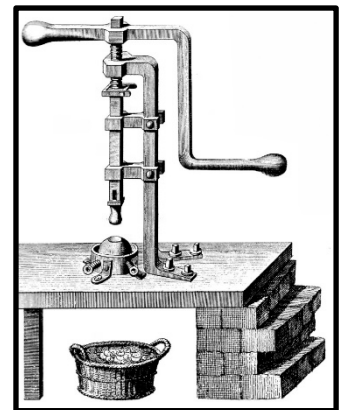
A furnace located very nearby would be necessary to heat the strips. Most often the power source for this rolling operation was a waterwheel, a device driven by channeling water from a local stream such as was present at Machin's Mills, although actual horse power could have certainly been used. As the copper was rolled out, it became thinner, wider, and longer. As the coins themselves tell us, this process of rolling out the copper to the desired thickness could be fraught with problems such as when, uncommonly, planchets of unequal thickness were produced. However, it did occur as the Standing Indian/Eagle on Demi Globe copper as seen in Figure 6 plainly shows us. Once the sheets of copper were the correct thickness, they were punched with a table-mounted screw press probably similar to a cookie cutter. While we don't know exactly what type of apparatus was used, it could have been similar to the model used in France around the same time, as seen in Figure 7. The operator pulled a handle, lowering the upper cutter onto the copper sheet, which was supported on a lower cutter. His manual strength forced the upper cutter through

Figure 6: The Standing Indian/Eagle on Demi Globe showing a poorly struck up design on both the obverse and reverse due to the thinness of the planchet at that area. Photos courtesy of Heritage Auctions, *ha.com*.



the copper into the lower cutter producing a planchet which would fall through a hole in the table and into a basket.⁹ It is apparent from studying the coins themselves that the workmen who were responsible for operating the planchet cutting device often tried to get as many planchets from the strip as possible. Occasionally they cut a planchet from the strip that was too close to an already cut planchet, causing a *curved* “planchet” clip to occur which was sometimes quite significant.

Figure 7: A typical planchet cutting screw press as illustrated in *Diderot's Encyclopedia* published in France in 1751. Photo courtesy of Dover Publications.



Also, rarely, a planchet was cut too close to the edge of the copper sheet resulting in a *straight* clip rather than a concave clip, both types of planchet clips being seen in Figure 8. The remaining “Swiss cheese” sheets, called *scissel*, were remelted into ingots and rolled out again to produce more planchets. As mentioned earlier, impurities in the copper would often lead to color variations in the coins when their metallic content interacted with the environment as seen in Figure 9. Before striking, the planchets, as found at Machin's Mills, were placed in a rotating cylinder containing sand, sawdust, and water, in order to smooth the planchet edges as they often had edge burrs as a result of the cutting process. This method, as a side effect, would also brighten the surfaces of the planchets. Other means of smoothing planchet edges could certainly have been used, such as cloth sacks rather than cylinders.¹⁰

⁹ Bowers, Q. David, *Whitman Encyclopedia of Colonial and Early American Coins*, Whitman Publishing LLC, 2020.

¹⁰ Rock, Jeff, Personal communication, Spring 2021.



Figure 8: (Left) A 1787 Connecticut copper Miller 33.13-Z.1 with a curved planchet clip and (right,) a 1787 Connecticut copper M.9-E with a straight planchet clip. Photos courtesy of Heritage Auctions, *ha.com*.

Figure 9: Vlack 9-76B imitation British halfpenny with unusual color most likely due to impurities in the copper revealing how these impurities interacted with the environment, altering the color of the coin. These variations in color do not appear to be related to corrosion or cleaning, as the surfaces in this example are extraordinarily smooth and do not reveal any signs of cleaning. Photos courtesy of Heritage Auctions, *ha.com*.



Prior to striking the planchets, the copper discs most likely had to be annealed to soften them in order to facilitate a better transfer of the impression from the dies to the copper and also to prolong the life of the dies.¹¹ This was the last step in the planchet preparation process just before they were placed on the coining press. If one examines the New Jersey Camel Head variety Maris 56-n, a coin which is felt to be always (or nearly always) found overstruck on a host coin, one can see many specimens where the host coin is clearly visible and often times attributable. However, there are some Maris 56-n specimens where the host coin cannot be identified at all. This dichotomy is possibly due to the fact that the well annealed host coins were sufficiently soft enough to allow the Maris 56-n dies to obliterate the undertype when struck, whereas host coins that were not sufficiently annealed, and thus harder, will show more of the undertype because their design was more resistant to being obliterated when struck, as visualized in Figure 10. The process of striking softened planchets fortunately caused them to become hard again, which fortuitously helped sustain them during their life in circulation.¹²



Figure 10: Two New Jersey Maris 56-n coppers, both overstruck, the one on the left from a well-annealed host coin and thus little undertype is seen as contrasted to the coin on the right which was struck probably from a poorly annealed host coin, thus the undertype (Vlack 6-76A) can be seen. Photos courtesy of Heritage Auctions, *ha.com*.

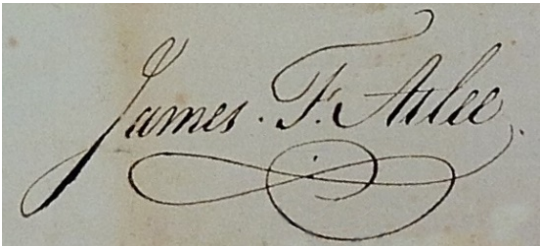
¹¹ Bowers, Q. David, *Whitman Encyclopedia of Colonial and Early American Coins*.

¹² The 2nd Edition of the *Whitman Encyclopedia of Colonial and Early American Coins* by Q David Bowers has an excellent review on the topics of planchet and die development, see pages 6-10.

DIE PRODUCTION

The procedure for making dies is a somewhat complicated process, and there were two basic ways that dies could have been produced; engrave the die completely by hand, or use punches and hubs. The production of dies most assuredly was associated with evolving processes and techniques. Skilled engravers had to be employed by the mints and it is also believed that individuals with some raw talent could have also been schooled in the art of die production. One such schooled individual is believed to have been James F. Atlee, the probable engraver at Samuel Atlee's Brewery Mint, as well as at the mint at Machin's Mills. It is believed that James learned all the specific intricacies and skills of the die engraving art from the notorious English counterfeiter Walter Mould while James was working at his father's New York City porter brewery and mint, circa 1785.¹³ The signature of James F. Atlee, as seen in Figure 11, reveals definite artistic talent, which becomes more obvious when his signature is compared with other signatures of the time.

Figure 11: Signature of James F. Atlee revealing obvious artistic talent.



HAND ENGRAVED DIES

The earliest and most simplistic technique for producing dies during the Confederation Period was hand engraving, where the engraver cut directly into the annealed die steel. One method for accomplishing this was by applying a thin layer of wax to the die face and then transferring the desired image to be engraved onto the wax.¹⁴ Engraving into the die steel would be in the negative, or mirror image as it pertains to the coin, so as to produce a positive image on the coin. Hand engraved dies of this period are probably best exemplified by the 1785 Connecticut coppers, although certain American-made counterfeits and imitation British halfpence were probably coined with hand engraved dies as well. In examining the 1785 Mailed Bust Right Connecticut coppers as seen in Figure 12, it is clear that these coins were struck from dies which had their central designs hand-cut directly into the annealed die steel and not impressed from hubs, with ornamentations, punctuations, lettering, fragile elements, dentils, and dates impressed into the die with punches or cut by hand. Although the busts look similar, they are clearly not identical such as you would expect from dies raised from hubs. Additionally, after the initial use, die embellishments were often done by hand to strengthen certain features of the die that may have been weakened during the minting process.

¹³ Trudgen Gary, A., "Samuel Atlee's New York City Brewery and Mint," *The Journal of Early American Numismatics*, Vol. 1, No.2, pp.27-58, December 2018.

¹⁴ Sholley, Craig, Personal communication, Spring 2021.



Figure 12: Hand cut central devices of two 1785 Connecticut coppers, Miller 3.5-B (left) and M.3.4-F.2 (right). Photos courtesy of Heritage Auctions, *ha.com*.

DIES CREATED BY HUBS

With time, experimentation, and probably absorption from other coiners, most likely from England, skill in the use of hubs became the standard means of creating dies. It is believed that Abel Buell was the first individual in America who utilized hubs in the preparation of dies. A hub can best be defined as a tool with which to make another tool. In our discussion, a hub can be an obverse or reverse central device, with or without the peripheral legends, like the Draped Bust of a 1786 Connecticut copper, with the Seated figure on the reverse. The smaller design elements, like letters, numerals, ornaments, and punctuations can collectively be called punches and were primarily engraved from forged steel, although it is possible that they were raised from a matrix, a tool which will be discussed a bit later. Very fragile elements, however, like branches and their leaves were most likely hand engraved directly into the annealed die since they are so delicate they would most assuredly break if impressed into the die as part of a working hub or punch. It is also possible that the knowledge as to hubbing fragile elements was not perfected at this time.¹⁵

The most complex method to fabricate a die probably began with the engraver producing in softened steel a positive relief of the image to be eventually transferred to the die. This positive relief image would look similar to a miniature sculpture. Carved in relief (raised above the horizontal plane of the steel) and in the positive (looking like the finished coin) this tool has been referred to as a master hub.¹⁶ Subsequently, this master hub would be hardened in the usual way by heating to redness, quickly cooling by quenching in an oil or water bath, and then tempering¹⁷ to reduce its brittleness. Constant movement in the liquid was serendipitously found to be essential for proper uniform hardening of the steel. This tool was then polished and possibly fit into a protective steel ring which prevented the Master Hub from spreading while it was being impressed, not punched, via a screw press into another annealed piece of steel producing a matrix hub.¹⁸ This matrix hub is incused and in the negative. From this matrix, a number of *working hubs* could be raised which would be positive in relief and would look like the final product. The same process of producing these working hubs was identical to the production of the matrix hub from the master hub. At this stage, the artistic engraver could modify certain features of the working hubs; however,

¹⁵ Sholley, Craig, Personal communication, Spring 2021.

¹⁶ Spilman, James, "An Overview of Early American Coinage Technology," *The Colonial Newsletter*, No. 65, pp. 812-830, July, 1983.

¹⁷ Tempering is a process of heating the steel to a lower temperature than one would do to anneal it (to a deep yellow or blue) and then allowing it to slowly cool to reduce the brittleness and stress on the steel when the die or hub is later operational and also to impart a degree of ductility to it.

¹⁸ Spilman, James, "An Overview of Early American Coinage Technology," pg. 819.

it would need to be softened again.¹⁹ Then the working hub was heated to red hot and quickly quenched to harden the hub which was then ready to produce dies by being impressed into the softened die steel. As in all steps of this process, tempering would follow the hardening phase, which would make the finished product less brittle and improve its ductility. Also, swirling the steel while it is being quenched was probably standard procedure for all quenching processes. But before the die was hardened and tempered, other elements were punched or hand engraved into it, like the date, the exergue lines, ornaments, letters (if not already in the working hub), and subtle elements.

After the dies were impressed by the working hub, the displaced steel had to go somewhere, as the steel was not removed as it was when master hubs were engraved. This displaced steel moved upwards and around the edges of the design. The displaced steel was then removed by polishing the dies, otherwise the coins would have exhibited “depressions” on their surface near the devices, due to the raised steel on the surface of the dies. Evidence of die polishing to remove the displaced steel can be frequently seen in the coins themselves as “die polishing lines”: thin, raised often parallel lines on the surface of well-preserved, usually close to mint state coins as circulation invariably wears these lines to obliteration. Figure 13, a Vermont RR-1 copper, reveals die polishing lines in the right obverse field, from U towards the nose and chin.



Figure 13: 1785 Vermont copper RR-1 with close-up showing die polishing lines in the right obverse field. Photos courtesy of Heritage Auctions, *ha.com*.

By studying some of the obverses of the 1786 Mailed Bust Left Connecticut coppers (examples shown in Figure 14), one can determine that these central devices were not cut into the die by hand like the 1785 coppers of Figure 12, but rather these central devices were impressed into the die by a working hub, created by Abel Buell. Eric P. Newman, in a very significant article on the relationship of specific 1787-88 Bust Right Vermont coppers (which he designates as Interlocked Vermonts) to the Vlack 9-76B Imitation British Halfpence, proved that hubs were used for the obverse and reverse central devices of these Interlocked Vermont Coppers as well as for the Vlack 9-76B.²⁰ Hubs saved time and produced a more uniform product. On close examination, there are subtle but clear differences in many of the central devices of coins struck from dies impressed by apparently the same hub. These minor differences are obviously not sufficient enough

¹⁹ Sholley, Craig, Personal communication, Spring 2021.

²⁰ Newman, Eric P., “A Recently Discovered Coin Solves A Vermont Numismatic Enigma,” *American Numismatic Society Centennial Publications*, pp. 531-42, 1958.

to be explained by being produced from a different hub. These subtle modifications were most likely done to the hub or die itself by the engraver by hand after he saw a finished coin to adjust his hub or die to exactly the way he wanted it. Now to add a bit more complexity to this process, not all working hubs contained legends or numerals; often the legend letters and numerals were added after the central devices were impressed into the dies. If one looks again at two of the 1786 Mailed Bust Left Connecticut coppers believed to be produced by Abel Buell, Miller 4.1-G and M.5.2-I as seen in Figure 14, it is clear that the letters and numerals *were* incorporated into the working hub, producing a *complex hub*, as the shape and relationships of the letters and numerals to each other and to the central device of these *different varieties* are the same.²¹ Clearly, punctuations and ornaments were not incorporated into the hub. By contrast, when one looks at the obverses and reverses of the 1787 Draped Bust Left Connecticut coppers produced by Buell, as seen in Figure 15 on the following page, it is clear that the hubs for these coins *did not* contain the letters or numerals. It has been suggested by Jim Spilman that Buell might have given up on the complex hub of the 1786 Connecticut coppers because the amount of hand finishing required with the complex hubs could have been substantial and in the long run might have been more time consuming.²² Punctuations, ornamentations, and subtle elements like branches and leaves on branches are often the elements that produce different die varieties.



Figure 14: 1786 Connecticut copper Miller 4.1-G on the left and 1786 Connecticut copper Miller 5.2-I on the right, revealing complex hubbed (letters and numerals included in the hub) obverses and reverses. Note the identical obverse and reverse central devices of these two coins and the identical shape and position of the legend letters and numerals of the coins in relationship to each other and to their central devices. Punctuations and ornamentations were obviously not in the hub and were added to the die after the die was impressed by the working hub. Photos courtesy of Heritage Auctions, *ha.com*.

What makes the study of pre-federal copper production so interesting is that there is very little primary source information defining the exact procedures each mint employed. It is certainly possible that a master hub was not made at all, and engravers made a negative incused matrix hub, carving backwards into the annealed steel, in order to save time, steel, and money.

²¹ Clark, Randy, Personal communication, March 2021.

²² Spilman, James, "An Overview of Early American Coinage Technology."



Figure 15: 1787 Connecticut copper Miller 33.4-q on the left and M.33.5-T.2 on the right, both revealing identical obverse and reverse central devices, *but* unlike the coins in Figure 14, where the letters and numerals were part of the hub, the letters and numerals in these coins were added to the die separately from the hub. On the obverses, for example, compare the positions of the A to the mailed armor, and the O-to-R spacing; on the reverse, note the position of the second E and effigy's hand and the I-to-N spacing. Also note differences in the shape of the numerals and their positions. Undoubtedly these two coins were not made from complex hubs. Photos courtesy of Heritage Auctions, *ha.com*.

Engraving in the negative was done in the early years of the federal mint, where the design to be engraved was transferred onto a “waxed” die.²³ As it is believed that Abel Buell hand-engraved many dies, as exemplified by the 1785 Mailed Bust Right Connecticut coppers without the benefit of a hub, he may have used the same wax transfer methodology as was later done in the early years of the federal mint.

Clearly the process of die production evolved over time. As will be discussed later, the Fugio copper hub trial piece found by Crosby in the early 1900s gives us probably the best insight into the workings of Abel Buell in at least one mint during the latter part of the Confederation Era. Since we do not have any extant Confederation Era dies, hubs, or trial pieces associated with the Connecticut coppers, we can only speculate that the procedures used by Abel Buell in producing the Fugio coppers might also reflect how he produced dies for the Connecticut coppers, since it is possible that the Fugio coins were struck in the same facility and by the same individuals as many of the Connecticut coppers.

THE SMOKING GUN

In 1902, Sylvester S. Crosby serendipitously discovered a previously unknown hub trial piece in copper for a Fugio pattern: the American Congress, Newman 1-CC; see Figure 16.²⁴ The obverse had the incused negative (reversed) impression of a sundial and sun with rays on the obverse, without any legends, punctuations, date, or ornamentations, while the reverse contained the incused negative impression of AMERICAN CONGRESS on a circular band with sunrays connecting the outer band to the 13 rings, each ring having an abbreviation of one of the original states, also incused and in the negative. Additionally, dentils were also present on the hub as will be discussed a bit later. This Fugio pattern was not adopted by the Federal government, as the Treasury Board changed the inscription from AMERICAN CONGRESS to UNITED STATES.²⁵ This hub trial piece was produced from two working hubs, both in relief and in the positive, rather than from two working dies, as the discovery piece was in the negative and incused on both the

²³ Sholley, Craig, Personal communication, Spring 2021.

²⁴ Crosby, Sylvester S. “Notes on an Undescribed Trial-Piece Bearing Impressions for Two Hubs for a Fugio Pattern,” *The American Journal of Numismatics*, Vol. 36, No.3, pp. 76-80, January, 1902.

²⁵ Newman, Eric, P., *United States Fugio Copper Coinage of 1787*, Jon Lusk, 2008.

obverse and reverse.²⁶ This opportune discovery clearly pointed out that hubs were used to make dies for the striking of Fugio coppers since the obverse and reverse of this “discovery” trial piece had to have been made from the hubs which were used to make the dies for this rare pattern, the American Congress Fugio, Newman 1-CC. This trial piece is exactly what the dies would have looked like, both the obverse and reverse. It is possible that the creators of these hubs wanted to see what the “dies” would look like before they impressed the hubs into the softened steel for the dies and this trial piece would have given them a glimpse of exactly that. It is clear that the legends, date, ornamentations, and punctuations were added to the die after the central devices were impressed into the softened die steel. It appears, however, that the dentilation seen on this trial piece was most likely added to the annealed matrix via a pipe-die punch, which was then used for the production of the working hubs.²⁷ As described by Jim Spilman, a pipe-die punch “is produced by cutting the dentil pattern into the end of a tubular metal pipe which was then used as a master hub to impress the border pattern into a matrix hub which was then used to make working hubs.” Very interestingly, this “pipe-die” punch appears to have been used in Buell’s 1787 Connecticut hubs as the patterns are identical between the Fugio dentils and the 1787 Draped Bust Connecticut copper dentils.²⁸ However, there is some controversy surrounding the use of a pipe-die punch for the Fugio coppers as well as for many of the Connecticut coppers.²⁹



Figure 16: The Fugio Newman 1-CC hub trial piece found by Sylvester Crosby and reported in the January 1902 issue of the *American Journal of Numismatics*. This trial piece, reproduced from Jim Spilman’s article, “An Overview of Early American Coinage Technology,” is made from two hubs, and not from dies, supporting the claim that Fugio dies were manufactured from hubs.³⁰ Photo credit: See acknowledgements.

COIN PRODUCTION AND DIE ISSUES

An aspect of coin production that can play havoc with the resulting coin impression is misalignment of the die faces. Coins may start out life being born from well-aligned dies but with time the dies might become misaligned [non-parallel die faces] with the resulting coin showing weakness in one part of the coin on the obverse and a corresponding area on the reverse where the die was unable to impart its design fully to the planchet. An example of misalignment can be seen in Vlack 9-87NY. Although it has been postulated that this misalignment may have been done intentionally to salvage the Vlack obverse 9 die, regardless of how the dies became misaligned, the resulting impression of these misaligned dies can easily be envisioned on this coin³¹ as seen in Figure 17.

²⁶ Spilman, James, “An Overview of Early American Coinage Technology.”

²⁷ Ibid, pg. 822.

²⁸ Ibid, pg. 818.

²⁹ Sholley, Craig, Personal communication, Spring 2021.

³⁰ Crosby, Sylvester, S., “Notes on an Undescribed Trial-Piece Bearing Impression for Two Hubs for a Fugio Pattern.”

³¹ Howes, John L., James Rosen, Gary Trudgen, *The History and Coinage of Machin’s Mills*, pp. 143-145.

Figure 17: Vlack 9-87NY showing a “weak strike” from possibly intentionally misaligned dies. Photos courtesy of Heritage Auctions, *ha.com*.



Rarely, pre-federal coins are found with wonderful strikes, almost proof-like surfaces, and cartwheel luster. When found, it is a product of a number of circumstances coming together by chance all at the same time: a well-prepared planchet, struck with excellent striking pressure from a well-executed die, cleaned of all debris and rust, and most importantly, that someone saved it. This was a total package almost as rare as Halley’s Comet, and essentially a diamond in the rough.

The best information we have about pre-federal dies comes from the study of steel during this time, its peculiarities, and mostly the coins themselves. Pre-federal coins were struck without a retaining collar and if the planchet was very soft the resulting coin could be larger in diameter than its siblings. Conceivably, this is why some coins are found with large planchets such as the Vlack 18-87C and 21-87D spread planchet varieties, whereas other coins of the same variety are on normal-sized planchets. Another possibility to explain these size differentials is that coins could have been struck on variably-sized planchets, but that option is less probable unless a different dimension planchet cutter was available. Furthermore, if there were a different planchet cutter in use, one would expect to see a significant number of large size planchets and we don’t. Additional factors that affected the dies reveal themselves in the coins they struck. Defects in the proper execution and production of the die steel could lead to a variety of issues. One such issue, commonly seen in pre-federal coinage, is *die buckling or sinking*, most likely due to uneven and insufficient hardening of the die and poor die forging. Further discussion of this complex issue will be found in a companion article to follow in a subsequent issue of the C4 Newsletter. Die buckling can best be described as a concave development in the die face, or a slight sinking in of the die face, when the interior of the die fails.³² If die buckling occurs between design elements, the resulting issue on the coin would be a raised area in the field because the copper would fill the concave depression in the die face. Die buckling is often seen in the right and sometimes left obverse fields of the Large Head Nova Eborac coppers, as pictured in Figure 18. However, if the die buckling occurs in the central device areas of the die, then one would see an absence of detail on the coin in that area with often natural planchet features seen instead of the intended design as

Figure 18: Large Head Nova Eborac with a raised snake shaped slightly shaded vertical area in the right obverse field stretching from just to the left of the B to the quatrefoil, secondary to a buckled die. Photos courtesy of Heritage Auctions, *ha.com*.



³² Sholley, Craig, Personal communication, Spring 2021.

found in Figure 19. This occurs because the copper could not be forced into the deeper recesses of the die (created by the die buckling) where the negative incised features now reside which would have given the coin its full design. This phenomenon is frequently termed “a weak strike.” In reality, the strike is not weak at all, as the rest of the coin shows strong legends and date. But for lack of a better term and to go along with decades of this moniker, “weak strikes” will suffice. Another issue that can also give rise to “raw or natural planchet” areas on struck coins, as discussed earlier, is uneven planchet thickness, where the planchet is too thin in areas to receive the full design of the die, as previously described in Figure 6. Thin areas on a planchet are not as common as die buckling, and the “raw planchet” location will be variable from coin to coin, depending on where the planchet is the thinnest. Die buckling will show the same location issues from coin to coin, since it is a die problem and not a planchet issue.



Figure 19: 1787 Vermont copper RR-14 (left) revealing natural planchet features seen on the central obverse and central reverse from being struck from a buckled die. The Vermont copper RR-16 (right) shows a central reverse depression from being struck from a die with the issues discussed in the paragraph above. Photos courtesy of Heritage Auctions, *ha.com*.

Another feature sometimes visualized on pre-federal coins are depressed areas often seen in the center of the reverse of these coins. This phenomenon is not an easy subject to understand, and will be tackled more in depth in a following article on this subject in a subsequent C4 Newsletter. For years, I have discussed with many friends the concept of die bulging to explain the phenomena of depressed areas on coins, however the truth is that dies do not bulge upwards. To bulge upwards, the die metal would need to rise in direct opposition to the force of striking. Obviously, that cannot happen. The cause of these depressions is complex but appears to be related to a number of factors occurring at the same time, including a sinking die surrounding the depressed area and a large incused die design as often represented by the bust opposite the depression as can be seen in the RR-16 or by a large buckled die area opposite the depression as seen in the RR-39. These reverse depressions are clearly seen in Figures 19 and 20. With the reverse *die sinking and* deep incused issues on the obverse die, the obverse die essentially “sucks” the copper away from the reverse planchet creating the depression one sees.³³ Rarely, one can see evidence of die bulging and planchet depressions in the same coin, as seen in Figure 20.



Figure 20: 1788 Vermont copper RR-39 revealing a coin struck from an obverse buckled die showing raised linear areas on the left obverse and a depressed area on the central reverse. Photos courtesy of Heritage Auctions, *ha.com*.

³³ This explanation of die depressions was clarified by Craig Sholley, Spring 2021.

The development of die breaks or cracks, which the pressed planchet can fill giving rise to raised copper above the fields of the coin, occurs due to stresses in the die, possibly caused by poor tempering and other die issues which are beyond the scope of this review. A recent article in the *C4 Newsletter* on die states of Nova Eborac coppers reveals quite nicely these multifaceted problems.³⁴ Die breaks can be perceived as small raised hairline copper features on the coin barely visible to the naked eye, but they can also be large raised copper features stretching often times to the full diameter of the coin. And interestingly enough, these die breaks can go very deep into the die thus making lapping out a die break all but impossible except for the very thin and superficial breaks.³⁵ Anyone who is a student of pre-federal coins, as well as early federal coinage, is well acquainted with these unwanted cobweb-like elevations on a coin, as seen in Figure 20. Hairline die breaks can increase in width and length so that actual parts of the die face can become detached from the die with the result that a large section of the planchet fills this void causing a cud, as seen in Figures 21 and 22. While it is beyond the scope of this article to delve into the complexities of cuds, one is referred to an excellent article on the subject by Jeff Friedman who discusses these cuds in relationship to Capped Bust half dimes in an article found



Figure 21: 1787 Maris 62.5-r, showing an obverse die break and cud, not to mention a signed obverse by the engraver, Walter Mould. Photos courtesy of Heritage Auctions, *ha.com*.

in the *John Reich Journal*.³⁶ Briefly, as defined by Friedman, a *full cud* is one that abuts the edge of the die in which the metal is raised above the adjacent field of the coin. A *retained cud* is raised within an area contained between die cracks or other elements, like letters, and it can affect the rim. The retained cud is raised above the adjacent fields of a coin. When the raised cud occurs in the interior of the die, not affecting the rim, it is referred to as an *internal cud* and all the metal is above the adjacent fields but not necessarily above the adjacent elevated elements. And an *incomplete cud* is a raised area of metal within a contained area between die cracks and/or design elements but not all of the metal is raised above the adjacent field or rim. Die breaks can be very useful in determining the emission sequence of coins with shared dies. Coin *A*, struck from the same obverse die as coin *B* but having a small obverse die break would have had to have been struck prior to coin *B* which exhibits a similar but more advanced and larger die break.

Figure 22: Seated Right Nova Eborac copper revealing an advanced cud on reverse. Photos courtesy of Heritage Auctions, *ha.com*.



³⁴ Glickman, James, "New Thoughts On Nova Eborac Die States," *The C4 Newsletter*, Vol. 28, #4, pp.21-35, Winter 2020.

³⁵ Sholley, Craig, Personal communication Spring, 2021.

³⁶ Friedman, Jeffrey, "Bust Half Dimes-When is a Cud Not a Cud," *John Reich Journal*, Vol.26, issue 2, July 2016.

Other issues that probably plagued early coiners is sinking the central device hubs and other puncheons, such as letters, numerals, punctuations and ornamentations too deeply into the die and also not sinking these devices at right angles or orthogonal to the die face. Sinking a hub too deeply or not at right angles to the die face may cause the planchet not to fill the exaggerated deeper recesses of the die when struck. The result of these errors in execution could result in part of the design ostensibly being lightly impressed, while other contiguous design features, like the legends and armor, are properly impressed as seen in Vlack 6-76A, Figure 23. This issue could leave a coin with characteristics similar to a buckled die.



Figure 23: Vlack 6-76A with parts of the obverse central devices weak, but with strong legends, armor, and hair ribbons. Similar issues are seen on the reverse. Most likely this was not due to buckled dies, as this coin never comes well struck, but probably due to the fact that the central device hubs were either impressed too deeply into the die steel, or more likely that the central device hub, in this particular case, was not orthogonal to the die face, resulting in a weak face and wreath but very strong

armor. Most likely the hair ribbons on the obverse were added after the central device was impressed into the die. Photos courtesy of Heritage Auctions, ha.com.

Trying to decipher whether weakness seen on a coin, such as on the effigy's head on the reverse of Vlack 2-71A in Figure 24, is due to a buckled die or due to hub sinking issues can be clarified by noting that it would be impossible for a die that had its device impressed too deeply into the die to *ever* produce a strong strike on the head on some coins and a poorly struck head on others, as seen in Figure 24. The issue with this coin is most likely due to a buckled die that occurred after a number of strikings. It is certainly possible, although highly unlikely, that this finding could be due to a die filled with grease or another foreign substance, or possibly due to the die being lapped in that area. Obviously, reduced die pressure applied to the planchet cannot account for the observations seen in Figure 24, as pressure applied to the planchet by the swinging of the fly bar would deliver equal force along the die surfaces. One can't deliver weak pressure at effigy's head, for example, while exerting sufficient pressure millimeters away.



Figure 24: Shown are two examples of Vlack 2-71A. Notice that the head of the effigy on the reverse on the coin on the left is very weak while the effigy's head on the right is very strong. The weak head on the left is due to a buckled die, not the result of the central device punch being impressed too deeply. Clearly the coin on the right was struck first. Photos courtesy of Heritage Auctions, ha.com.

Since die steel was expensive and dies were time consuming to make, it is assumed that repairs to the dies, such as polishing the surfaces and lapping specific areas of the die were preferable to scrapping them altogether. Two issues on die surfaces that are often confused are die rust and die spalling. Rust is an environmental effect on the die formed by the reaction of iron and oxygen in the catalytic presence of water or air moisture, whereas spalling is a flaking of the die's surface due to a defect in the die unrelated to the environment and most likely made worse by repeated strikings. Idle dies sitting on a shelf could develop rust in a matter of days, if not sooner, in the right environment and this damage would leave fine pock marked surfaces on the die face, resulting in tiny raised pimple like areas on the struck coin. Spalling does not look like fine small pimples on the surface of the coin, but rather like raised flaky shaped areas on the coin. Repairing the surfaces for either of these problems would necessitate the dies being polished. Unfortunately, much of what we coin collectors call die rust is actually spalling.

During the process of repair, it is certainly possible that an over-zealous worker could remove some superficial design elements while polishing a reannealed die face. Lapping is essentially a type of polishing using a rotating wheel in which certain aspects of the die could be removed. An over-zealous workman could easily remove important elements of the die such as seen in the Nova Eborac Seated Right copper, where it appears that the lower left leg of the effigy might have been accidentally removed in an effort to remove die breaks (see Figure 25). Given the fact that die breaks go too deep into the die, lapping would not be useful to address a die break unless the break is in the field and extremely small and shallow. The process of lapping a die can appear to increase the distance between devices making the post-lapped coin possibly appear to be a new variety because of the relationship of certain elements to each other. This apparent observed increase in distance between design elements is because device punches were tapered from the base to the face of the punch.³⁷

Figure 25: Nova Eborac Seated Right copper. Note the loss of the effigy's left leg, possibly due to over-zealous lapping. Photos courtesy of Heritage Auctions, *ha.com*.



Another fascinating aspect of die production is the addition of very subtle elements to the die after the main elements of the design were impressed into the die. As discussed earlier, small and fragile elements, such as branches and leaves, which are found in the reverse design of many Confederation-era coin types, are so delicate that if they were part of a hub and “pressed” into the die, it is possible that they would break off. Another possible theory is that fine details did not transfer well from hub to die.³⁸ While the die was still soft, these elements were hand engraved or punched into the die. Overdates, misspellings, and repunched letters are common errors in pre-federal coinage, attesting to the novice workforce that populated these mints.

Dies wore out at many different rates, which was related to how well the dies were prepared and how much use the dies saw. The imitation British halfpenny Vlack 87C reverse die was paired with *seven* different obverses of imitation British halfpence made at Machin's Mills, finishing its

³⁷Trudgen, Gary, Personal communication, Spring 2020.

³⁸ Sholley, Craig, Personal communication, Spring 2021

Herculean efforts with the RR-13 in the Vermont series, a.k.a. Vlack VT-87C. Many earlier students of the series believed that the “weakness” seen in the reverse of this die was due to the fact that the coiners deliberately engraved the die very shallowly and with little detail so as to give the appearance that the coin had been in circulation for quite some time,³⁹ as seen in Figure 26. This theory has plainly been debunked.⁴⁰ In fact, Vlack 87C was probably one of the best produced dies in the whole series of imitation British halfpence to come out of Machin’s Mills. At its end, the die did not suffer any fatal die incidents, as no fatal die breaks have been found on extant coins with this reverse, in reality, it just plain wore out.

Figure 26: 1787 Vermont RR-13 copper showing a worn out reverse die, Vlack 87C. Photos courtesy of Heritage Auctions, *ha.com*.



THE STRIKING OF THE COINS

Probably the closest we have to primary source evidence about the physical striking of these coins comes from the information handed down to Dr. Franklin Benjamin Hough by Thomas Machin, Jr., circa 1853-54:

“The coining press was a screw, with an iron bar about ten feet long through the top. On each end of this bar was a leaden weight of perhaps five hundred pounds. The threads of the screw were large and square and worked through an iron frame. Ropes were attached to each end of the bar, and it swung about half way around by two men pulling upon the ropes; two other men pulled the lever back and a fifth laid on the blank with his fingers. The last operative named sat in a pit so that the lever would not touch his head.”⁴¹

The quoted paragraph above describes the workings of the press at Machin’s Mills. The pressman’s job was to feed a planchet onto the lower die which was fixed in the press. The upper die was attached to a torque block, a device between the head of the screw and the die to prevent “smearing” of the planchet when striking occurred.⁴² After striking, the coin was removed, most likely with gloves because the coins were hot after striking. This occurred because the act of striking the planchet moved the metal of the planchet and the internal friction of moving metal plus the friction against the dies created heat.⁴³ It was reported by Thomas Jr., that about sixty coins per minute were struck at a maximum, but obviously the average number of coins minted over a long period of time was significantly less. It is important to keep in mind that this information about the mint was told to Thomas Jr., probably by his father, as he was much too young to remember the workings of the mint when it was operational.

³⁹ Kurth, Howard, “Connecticut and Vermont Coppers of British Type,” *The Numismatist*, American Numismatic Association, Vol. LVI, pp. 102-4, February 1942.

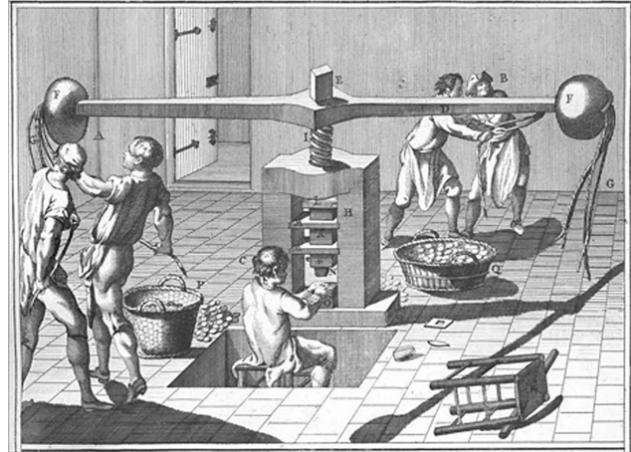
⁴⁰ *The History and Coinage of Machin’s Mills* op. cit.

⁴¹ *Ibid.*

⁴² Sholley, Craig, Personal communication, Spring 2021.

⁴³ *Ibid.*

Figure 27: A large coinage press probably like the one used at Machin's Mills as illustrated in *Diderot's Encyclopedia*, published in France in 1751. Photo courtesy of Dover Publications.



There were probably about five people working the press at Machin's mint since it required four men pulling on the lever arm and one man operating as the pressman who placed the planchet on the lower die and removed the coin when struck. Most likely there were other workman at the mint doing various jobs like bagging coins, bringing planchets to the press, operating the planchet cutting press, etc. However, it is certainly possible that other pre-federal mints such as those in Vermont, Connecticut, Massachusetts, New York City, and New Jersey might have had a totally different arrangement.

PLANCHET POROSITY

A word about porosity, the scourge of pre-federal coins and a characteristic of a coin that everyone hates. Porosity develops due to the coin being in a damp environment. This environment could be either in the ground, having fallen out of one's pocket, or sitting in a container or shelf in a musty damp environment, or deliberately buried for "safe keeping." It is extremely unlikely that porosity seen on a coin could have originated from the planchet *before striking*, a concept that I have occasionally heard. Any porosity on the planchet would most assuredly have been pounded away when the planchet was struck. An issue occasionally discussed with novice and seasoned numismatists alike is how one can tell if the porosity on a coin was present before the coin circulated or developed after its life in circulation. The intuitive answer lies in looking at the high parts of the coin. If the high parts of the coin are the only parts of the coin that are devoid of porosity, then in all probability the coin circulated after a stint in a poor environment where it acquired the porosity and thus during circulation the porosity wore off. If the porosity is uniformly present on the coin, then in all likelihood the coin suffered its fate after it circulated and then found itself in a poor environment.

ERRORS ASSOCIATED WITH THE MINTING PROCESS

During the Confederation Period, errors in the coining process, from planchet production to the finished coins were not uncommon. As discussed earlier, some of these errors occurred before striking, such as clipped planchets. Another error commonly seen on pre-federal coinage as well as on federal coinage is the result of clashed dies. Clashing is a term used to describe the event that occur when the obverse and reverse dies come together in the press without a planchet between them. The force might impart the design details of one or both dies into the other die. Subsequently, when a planchet is fed between these clashed dies, mirror images of parts of the obverse die will be seen on the reverse of the coin and/or mirror images of parts of the reverse die will be seen on the obverse of the coin. Of course, not all coins struck from clashed dies will exhibit opposite die details. The hardness of the dies and striking pressure when the clashing occurred will determine if design features are transferred from one die to the other. Examples of clashing can be seen quite nicely in Figure 28 which shows a Newman 11-B Fugio copper displaying on the right obverse of

the coin the rings from the reverse die. Damage to dies can and certainly did occur when objects fell or got impaled on an annealed die face. Such is the case of the 1783 Crosby 1-A Nova Constellatio copper, where apparently a gang punch, a device used to impart dentils onto a die, was somehow impressed onto two areas of the softened obverse die face which left incused images of this punch in the die. Subsequent strikings with this damaged die reveal two raised images of this gang punch on the coin, which is illustrated in Figure 29. Note, however, that the gang punch images on this coin, as discussed by Eric P. Newman, do not appear to be from a Nova Constellatio die, as it is not curved sufficiently enough to have been used for this die, suggesting that this gang punch, whose impressions are on the obverse of this coin, was made for a larger coin or possibly a medal.⁴⁴



Figure 28: A Newman 11-B Fugio copper with clashed dies showing the reverse rings now incused on the right obverse and the incused area within the rings now in relief. Photos courtesy of Heritage Auctions, *ha.com*.

Figure 29: A Crosby 1783 1-A Nova Constellatio copper exhibiting gang punch errors on the obverse. Photos courtesy of Heritage Auctions, *ha.com*.



Double strikes were not unusual in the coins of this era, as seen in Figure 30. Most likely, some of these double strikes were due to the inattentiveness of the worker in the pit, in failing to remove the coin in time before the fly bar was swung and the dies met again on an already struck coin. In addition, poorly centered planchets on the dies led to off-centered coins, as is also seen in the double struck coin in Figure 30. It is certainly possible, if not probable, that intentional “goofing” around in the mint produced some of these errors as discussed in a commentary on this particular coin by John D. Wright.⁴⁵

Figure 30: A double struck and off center struck 1787 Miller 16.2-NN.1. Photos courtesy of Heritage Auctions, *ha.com*.



Brockages are also seen in pre-federal coinage, especially in the Connecticut series, which may be a reflection of the vast number of Connecticut coppers that were struck. A brockage is a coin showing the same image on both sides, one in relief and in the positive and the other incused

⁴⁴ Newman, Eric P., “New Thoughts on the Nova Constellatio Private Copper Coinage,” *Coinage of the American Confederation Period*, The American Numismatic Society, pg. 91, New York, NY, 1995.

⁴⁵ Wright, John D., “Connecticut MOS Specimen with 90° Rotated Reverse,” (TN-62) *The Colonial Newsletter*, pg. 576, October 1976.

and in the negative. The mechanics of this error are due to a coin getting stuck to the die after it was struck and thus, in and of itself, acting as a die for the next planchet as seen in Figure 31. The coin on the left was created when a previously struck coin stuck to the upper reverse die, with the obverse of the coin showing and thus acting as a “die” itself when a new planchet was fed onto the lower obverse die. Thus a coin is born with two similar obverse images, one side being totally correct and the other being incused and in the negative, having been struck from the retained coin. The same can also happen with the reverse die as shown in the image on the right in Figure 31. The fact that the planchet is soft and the retained coin is now a bit harder after striking makes this mistake possible. Depending on which die the coin gets stuck in determines if you have an obverse or reverse brockage. And not to be upstaged, there can be a variety of weird striking errors, some of which are so complex that prolonged study is needed to sort them out, as seen in Figure 32 of a Vlack 10-77A.



Figure 31: Connecticut obverse brockage (1787) Miller 31.1- and a Connecticut reverse brockage M.-r.1. Photos courtesy of Heritage Auctions, *ha.com*.

Figure 32: This figure, taken from page 260 of *The History and Coinage of Machin's Mills*, is a complicated error of a Vlack 10-77A, a double headed coin with a reverse brockage seen on the right, with an incused mirror-image of the date, parts of the legend, and a hint of Britannia. As stated in the book, this is a very complex striking error and the analysis of it might not be totally correct. Photos courtesy of Heritage Auctions, *ha.com*.



THE FABRIC OF A COIN

A topic not easily understood from the written word is the concept of the *fabric* of a coin. Mike Packard, a Massachusetts copper specialist, has used this term numerous times in describing the four counterfeit Massachusetts Coppers,⁴⁶ saying that “*the fabric of these coins suggests production outside of the authorized Massachusetts mint.*” Really, there is not one or any number of adjectives that can best describe what one means when it is said...*its fabric is just not consistent with an authorized emission.* It’s the feel, the look, the overall gestalt one gets when an observer looks at the totality of a coin; it’s just not one thing that can be pointed to. It can’t be categorized, nor learned from a textbook or a computer, but only from experience by looking at many hundreds of coins, hopefully with an experienced pre-federal numismatist at your shoulder or behind the table.

⁴⁶ Packard, Mike, Personal communication, Spring 2020.

CONCLUSION

The production of coins during the Confederation Period was associated with multiple tasks such as rolling copper, planchet cutting, making dies, striking coins, bagging coins, maintaining equipment, and shipping coins. Additionally, evolving technologies surely occurred during this time period. Unfortunately, there is little primary source information about their production and thus most of the theories as to how these coins were made are based on precious few facts. The recollections given to Dr. Franklin Benjamin Hough by Thomas Machin, Jr., around the mid-1800s concerning the operations at Machin's Mills, the serendipitous discovery of a hub trial by Sylvester S. Crosby, and information gleaned from the ledgers of the Company of Coining Coppers⁴⁷ (Connecticut Coppers) are probably the closest bits of primary source evidence that we have regarding the manufacture of Confederation Coinage. The information in Crosby's *The Early Coins of America*⁴⁸ provides excellent accounts but unfortunately is backed up by little primary source documentation. So we are left with the coins themselves and our knowledge of coin making in the federal period and in Europe where documentation is more robust. Interestingly, in the remembrances of Thomas Jr., he did not talk at all about how the dies were made other than that James F. Atlee was the engraver. Fortunately, we have the Machin's Mills indenture which spells out which individuals were responsible for the physical coining operations at the mint, namely James F. Atlee and Thomas Machin. Analysis of 1786 Connecticut coppers revealed that complex hubs were used.⁴⁹ And clearly Newman showed that hubs were used in the making of the dies for the Interlocked Vermont coppers and unauthorized British Halfpence.⁵⁰

In closing, I must mention two individuals who have made major contributions to the study of our understanding of minting technology, specifically Jim Spilman and Walter Breen, both of whom laid the foundation for further study.

*As with all theories, time and discovery can alter long held beliefs and it is certainly not beyond the realm of possibility that my concepts regarding this coinage with time may be altered. But for now, I present my opinions based on the best information I could gather.*⁵¹

All coin photographs are courtesy of Heritage Auctions. Pictures of the ingot rolling machine and James Atlee's signature are courtesy of *The History and Coinage of Machin's Mills*. The picture of the British barrel hoop is courtesy of a private collector and the Fugio hub trial picture is courtesy of *The Colonial Newsletter* (James Spilman, "An Overview of Early American Coinage Technology.") Diderot's coining press and planchet cutter illustrations are courtesy of Dover Publications and *The History and Coinage of Machin's Mills*.

I would like to thank Randy Clark, Eric Goldstein, Phil Mossman, Neil Musante, Jeff Rock, Craig Sholley, Gary Trudgen, and Mark Vitunic for their time and efforts in reviewing this article, often coming to my rescue by giving me very helpful suggestions in making this discussion better. I would also like to acknowledge those now unremembered individuals who aided me in this paper. A paper on this topic is not written by one person alone, but helped by the numerous numismatists

⁴⁷ Clark, Randy, as found in the soon to be published reference work on Connecticut Coppers, 2021.

⁴⁸ Crosby, Sylvester, *The Early Coins of America*, 1875.

⁴⁹ Clark, Randy, Personal communication, Winter 2020.

⁵⁰ Newman, Eric P., "A Recently Discovered Coin Solves A Vermont Numismatic Enigma."

⁵¹ Paraphrased from *The History and Coinage of Machin's Mills*, 2020.

and die makers I came in contact with over the many years of collecting coins. Any errors in this article, however, are the sole responsibility of this author.

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JUNE 13, 2021 INTERVIEW WITH ANNE BENTLEY, CURATOR OF ART & ARTIFACTS, MASSACHUSETTS HISTORICAL SOCIETY

(Jeff Burke)

INTRODUCTION

Special thanks to Anne Bentley, Curator of Art & Artifacts at the Massachusetts Historical Society (MHS) in Boston, Massachusetts, for taking the time to answer my questions about colonial medals, coins, and paper money specimens in the MHS collection. I conducted a Q & A interview with Anne through an exchange of e-mails in May and June 2021.

My wife and I spent about nine months in Massachusetts back in 2007 to '08, when I was a visiting assistant professor at College of the Holy Cross in Worcester – not far from Boston, although unfortunately we didn't visit the MHS while we were there. (As a funny aside, our first day in Worcester, we had checked out books from the Worcester Public Library before we had food in our apartment refrigerator!) We would like to make a return trip to Boston to see the wonderful MHS artifacts and exhibits that Anne Bentley describes here.

QUESTIONS AND ANSWERS

Q: I read on the Massachusetts Historical Society website that you have been at the MHS since 1973. What have been your highlights as a conservator of manuscripts and curator of the fine arts collection?

*A: I would have to split my highlights among my various responsibilities. For the conservation era it would have to be working on Thomas Jefferson's manuscript for his only published work, *Notes on the State of Virginia*. (We have a full account of the manuscript and disbinding project at:*

<http://masshist.org/thomasjeffersonpapers/notes/index.php>.)

As curator of the art and artifacts, documenting the sword that Robert Gould Shaw carried when he fell at the assault on Fort Wagner, July 18, 1863, is hands down the most exciting and meaningful project in that realm.

For the numismatic collection, my most memorable highlight was discovering the gold Prix Montyon conferred on William Thomas Green Morton by the National Institute of France in 1850. It had been returned from a loan and tucked into the museum safe unopened in the 1960s. It was then apparently forgotten and subsequently written off as lost by the librarian at the time. As I was cleaning out the safe, it was the final package, wrapped in brown paper and tied with string. You can imagine my astonishment when I opened it to reveal a stunning gold medal in a large gold collar! You can bet we keep very good tabs on it since then!



Q: Can you recall any stories about your early years of collecting? Did a grandparent or other figure pique your interest in collecting coins?

A: *Quite the opposite! I was born into a State Department family so grew up as an Embassy brat. Every two and a half years we moved to another country so we didn't collect much beyond a few keepsakes here and there. The only coin collecting was unspent change. Even now, I don't really collect, probably because I do so much cataloging of the Society's art and artifact collections and that satisfies any desire I might have in that regard.*

Q: Can you describe your own current collecting focus?

A: *For the Historical Society's numismatic collection we are working to recatalog the entire collection online to finally get a handle on what we actually have. I was going to start next year after I retire from full-time curating, but the pandemic meant that I could transcribe the catalog cards and get a jump start. It will take a while before we systematically search out pieces we want to fill in gaps. I should also state that we primarily collect medals, both national and Massachusetts-related. We sold most of our coins during the mid-1960s*

through the 1970s because there were so many coin thefts in the Boston area during that time. We also felt that there were far better collections in numismatic museums so we decided to focus on medals. Most of our collection came as gifts and with family papers, since we are first and foremost an archive.

Q: What can you tell us about the Comitia Americana set of silver medals and the unique gold Manly medal in the collection?



A: *The Washington-Webster set very nearly didn't survive to be delivered to Washington. When Jefferson brought this case of 11 medals to the U.S. in 1789, Jefferson disembarked, leaving his crates for unloading. The ship caught fire and burned to the waterline but the thick wooden crates and dense packing helped the medals survive. After Washington's death, a family member bought them and pawned them after the Civil War. Daniel Webster bought them, and left them to his grandson, who later pawned them to W. Elliot Woodward, who stored them in Boston's Boylston National Bank. Master thief Adam Worth cleared out the vault on November 21, 1869, and escaped to Europe. Fortunately a bank employee had moved the set to an inner vault, untouched by Worth. Webster's friend, Peter Harvey, bought the set from Woodward and donated them to the Massachusetts Historical Society in 1874.*

The gold Manly medal came to the MHS in William Sumner Appleton, Sr.'s magnificent collection of Washingtoniana and other medals in 1905. He had possibly just acquired it when he displayed it here in 1875, according to the Boston Daily Globe of May 15:

City and Suburban. The City. Notes of the Day About Town...--The only gold medal of President George Washington of 1790 known to be in this country was exhibited at the monthly meeting of the Massachusetts Historical Society.

It is still considered unique in gold and is handsome indeed.



Q: What are some exciting numismatic events or exhibits the MHS has planned for the future?

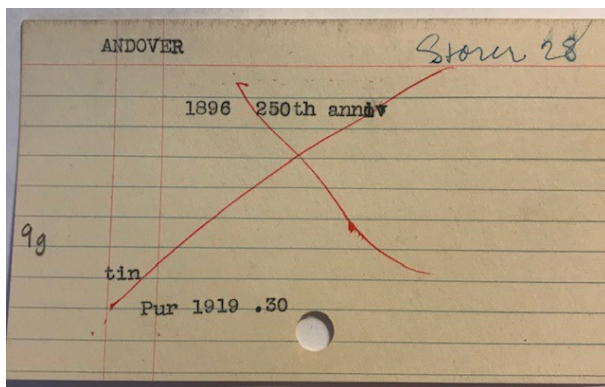
A: *We are busy fitting up a small gallery, one case of which will be devoted to the display of our medals and remaining coins. This should be open in 2022.*

Q: What suggestions do you have for getting more numismatists to make full use of the colonial coins and currency available for study in the MHS collection?

A: *Until the collection is fully accessible in our online catalog, researchers should contact me directly for access to the medals, coins and obsolete bank notes. We have all of our researchers register for free in our Portal1791 at www.masshist.org and we register everything that is requested for examination or photography so that you have a complete bibliographic record for your files. The colonial Massachusetts notes and fiscal paper are accounted for in ABIGAIL, our online catalog, and readers can request those directly for review in our reading room when we reopen to the public (as yet we have no firm date—but are able to provide images. Check the information on our website.)*

Q: What have been some of the challenges of converting the Society's artifact records into the online catalog?

A: *The main challenge is time versus volume of work. I have had interns and volunteers, but since I have to check their work before it goes to our head cataloger for coding, it hasn't made re-cataloging any faster. And transcribing the cards for the numismatics is basically name rank and serial number. Then I have to find the object when I am in the building, confirm specifics, and flesh out the descriptions. Here is an example:*



Medals, Andover, Mass. Storer 0028
Andover 250th Anniversary, 1896
Tin, 32 mm, 9 grams
Warner, William H. & Bro. (Charles K. Warner), engravers, Phila.

Ob. Arms of Commonwealth of Massachusetts within a half-circle of 13 stars.

Rx. 250th ANNIVERSARY OF ANDOVER, MASS.* around text at center: HELD / —□— / MAY 16-20 / —□— / 1896.

Purchase 1919 (30 cents)

Q: What are your favorite colonial coins and paper money specimens in the MHS numismatic collection?

A: *Our NE silver set of shilling, sixpence, and threepence are dear to me. The sixpence was stolen in the 1960s and was returned to us anonymously several years ago, reuniting the only known set of NE 1652 coinage.*

As a printmaker, I truly enjoy our obsolete bank notes for the spectacular engraved vignettes—especially those of real town centers and trades.

Q: Can you describe some recent acquisitions to the collection?

A: *Our most recent additions have been pinbacks collected from staff members who were vaccinated against Covid-19. These will be part of our pandemic collection of masks, buttons, photographs, diaries and journals, and imprints documenting our common experience. We also recently purchased a 1766 Great Britain George III Guinea to include in our recent exhibition on the Boston Massacre. After the trial John Adams was paid a guinea for his services defending the British troops guarding the Custom House on King Street.*



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A SURVEY AND EVALUATION OF THE WEIGHTS OF THE 1787 CONNECTICUT COPPERS

(Kevin Patton)

This survey was inspired by my interest in the Machin's Mills coinage series, which, in addition to contemporary counterfeit British halfpence, includes much of the Vermont series, several counterfeit New Jersey copper and Massachusetts cent varieties, and numerous counterfeit Connecticut coppers, including at least fifteen of the two hundred and forty-five listed varieties bearing the date of 1787. Eight of those fifteen varieties are very similar in style of engraving to the Machin's Mills halfpence, and are of similar low weight. The other seven are die-linked to Machin's Mills through the use of obverse dies that had previously been used to strike 1788-dated coppers, with all 1788-dated issues believed to have come from Thomas Machin's mint in Newburgh, New York. Those obverses and the reverses with which they are paired are of the style used by the original mint in New Haven, or by its successors in that city, and are believed to have been purchased by Captain Machin when those operations closed, circa mid-1789; some of the dies were apparently used to strike coins in both cities (e.g. some of the 1787-dated reverse dies,) and some were likely used only at the Newburgh mint. This enigmatic story is told in great detail in several references, including Breen (1976,) Mossman (1993, 2013) and, most recently, in *The History and Coinage of Machin's Mills*, by Jack Howes, James Rosen, and Gary Trudgen, newly-published by C4.

While fifteen varieties of 1787-dated Connecticut coppers are currently attributed to Machin's Mills, there could be others that were struck there with second-hand dies, but that lack any clear ties to that operation. The likely indicators that a variety belongs in this category are that it is relatively scarce, it occurs only with the dies in a worn or late-state condition, has a low average weight and its planchet characteristics show consistencies with those of other issues linked to the mint. Another possible indicator is the presence of two weight populations within a variety, one of 'normal' weight and one of low weight, with die wear indicating that the lightweight specimens were struck later. Specimen weight is almost always reported in modern catalogue listings, and seemed like it might be very useful in identifying possible Machin's Mills issues; while I had no expectation of proving the mint location of any varieties, I hoped to find some prime suspects.



Figure 1. Connecticut 1787 copper variety Miller 3-G.1. 94.4 grains, 27.3x28.1mm. Engraved and struck at Machin's Mills, using dies attributed to James F. Atlee. Ex-Twin Leaf. All photographs are by the author.

Past research by Dr. Philip Mossman and others indicates that Connecticut's original state-sanctioned mint, the Company for Coining Coppers, typically struck coins with a weight close to the 144 grains specified in its State charter; those attributed to its successor in New Haven, James Jarvis and Company, were a bit lighter, and the last coinage from that city, believed to have been issued by Benjamin Buell, son of Abel Buell, was lighter still, but not as light as the typical coinage of Machin's Mills. Establishing a list of average weights by variety would, I reasoned, serve as a screening tool to identify the lightweights for further investigation. I planned to do only a quick study, but soon realized that there was so much variability of within-variety weights that it would be unreliable unless a statistically relevant population of coins was evaluated for each variety. Ultimately I recorded the weight data from over 4,100 listings, then filtered out the duplicates and searched for additional data for scarce varieties until I had nearly 3,700 unique specimen weights. The results are presented in Table 1, which is placed at the end of this report due to its length.

I compiled the survey in three phases, initially recording weights from sixteen major auction catalogues, as well as the weights of approximately 990 specimens in the American Numismatic Society collection. This provided at least ten values for two-thirds of the varieties. I then searched for additional weights for the seventy-eight varieties that had fewer than ten examples, using five more auction catalogues, the searchable on-line sales listings of Stack's-Bowers and Heritage Auctions, the Robert Martin research notebooks (online, at the Newman Numismatic Portal of Washington University,) and in other references, finding ninety-five additional weights. Finally, I found eleven more weights for the twenty least-represented varieties, in the catalogues of ten additional C4 auctions and of the three latest major sales, the Donald G. Partrick and 'E Pluribus Unum Collection, Part Two' sales on November 1 and 11, 2020, and the January 23, 2021 sale of the Neil Rothschild Collection. All sources are listed in the bibliography.



Figure 2. Miller 32.4-Z.3 of 1787. 140.9 grains, 27.9 x 28.2 mm. Ex-Twin Leaf, ex-C4 2006. This obverse die was used at Machin's Mills to strike the 1788-dated varieties M. 16.4-A.2 and M. 16.4-L.2, prior to the 1787-dated M. 32.4-F, 32.4-X.5, 32.4-Z.3 and 32.4-Z.20. The reverse die was previously used (presumably by James Jarvis and Co.) to strike Miller 33.33-Z.3 and 33.34-Z.3 of 1787. Weak details on this condition census specimen are due to die wear and bulging.

The most time-consuming part of the compiling the survey was the checking of the data. I went back through each catalogue at least twice, proofreading and checking for pedigrees to other auctions in the survey. I next sorted the weights of each variety in order and compared the catalogue listings of all those with nearly equal weights, finding several

duplicates whose pedigrees I had missed, as well as unreported pedigrees for ten specimens; these are listed in the Notes to Table 1.

RESULTS

My survey includes 3,684 individual specimen weights from 241 of the 245 listed varieties of 1787-dated Connecticut coppers. Three of the missing four are R8/R9 rarities, and the fourth (M. 33.29-Z.25) is an R7+ with four known specimens; the available reports and listing for these coins lacked weight data. The survey has an average of fifteen specimens per variety, with a median of fourteen; there are at least a dozen weights for all varieties of rarity five or less, and at least six weights for each R-6 variety. Most rarity-one and rarity-two varieties are represented by about three dozen weights, led by the fifty-nine specimens of Miller 4-L, the ‘horned bust’ type, seventeen more than the next-most represented variety, M. 33.7-r.2. Some interesting statistics are provided below, in Tables 2 and 3.

Table 3 provides a comparison of the results of this survey to the data provided by Philip Mossman in his books *Money of the American Colonies and Confederation*, (1993,) and *From Crime to Punishment: Counterfeit and Debased Currencies in Colonial and Pre-Federal America*, (2013.) Dr. Mossman tabulated the weights of 2,019 Connecticut coppers, including 1,102 1787-dated specimens, dividing them up into several groups and sub-groups. As in the present survey, the weights in Mossman’s survey were the uncorrected catalogue weights of the specimens.

Table 2. Selected Results of the Survey		
Lightest specimens	Miller 15-F, 52-G.2 and 33.19-Z.2	67.7, 67.9 and 71.3 grains
Heaviest specimens	9-E, 32.5-aa, 37.3-i, 37.6-k.4, 37.8-HH	180.0 to 186.8 grains
Highest Average Weight	16.2-NN.2 and 16.4-n	159.0 and 154.7 grains
Lowest Average Weight	52-G.2, 52-G.1, 3-G.1, 1.4-WW	93.7, 98.6, 100.0 and 106.8 grains
Greatest Weight Range	33.40-Z.1, 15-F, 33.38-Z.6	92.6, 85.4, 82.9 grains
Varieties with the lightest maximum weight specimens	3-G.1, 33.50-Z.24, 33.35-Z.1, 52-G.1, 52-G.2	108.1 to 111.4 grains
Varieties with the heaviest minimum weight specimens	16.5-p, 16.2-NN.2 (Also one specimen each: 33.14-Z.2, 33.36-T.3, 33.49-Z.7, 49.2-Z.1)	145.0, 150.2 grains (Five wts. each.) Unique wts. were 148.3 to 153.5 gr.
Highest Standard Deviation*	9-E, 33.40-Z.1, 33.10-W.6, 33.38-Z.6, 37.9-e	20.2 to 28.4 grains
Lowest Standard Deviation*	20-a.2, 29.1-a.2, 29.2-o, 33.12-Z.21, 42-o	4.4 to 5.3 grains.
Averages by variety:	Average Weight 133.3 grains	Average Std. Deviation 11.7 grains
Population as a whole:	Average Weight: 134.1 grains	Standard Deviation 15.1 grains
*Excluding varieties with less than eight specimens (highest Standard Deviation) or six specimens (lowest SD.)		

Table 3. Comparison of Mossman (2013) to This Survey					
1787 Connecticut Coppers	Mossman, 2013		This Survey		Notes
	Wt.	n	Wt.	n	
Company for Coining Coppers (CCC,) New Haven, Conn., Oct. 1785 to June 1787.					
DBL, Large Letters	144.3±1 0.9	74	143.6±1 2.4	262	Note 1
MBL (obverses Miller 7, 8)	143.8±1 1.8	27	144.8±1 0.8	53	1787 M. 7 die is 1786 M. 5.3
James Jarvis & Co., New Haven, Conn., June 1787 to Sept. 1788.					
DBL, cinquefoils	134.5±1 4.4	442	132.7±1 3.4	1958	Note 2
M. 29.1-a.2, 29.1-n, 29.1-p	--	--	137.2±9 .7	39	1787 M. 29.1 die is 1786 Miller 7
DBL, crosses	145.7±1 2.6	61	143.0±1 2.0	191	Note 3
DBL, fleurons	144.0±1 1.6	72	140.1±1 3.9	364	Note 4
Morristown, N.J. (Walter Mould,) Feb. 1787 to Aug. 1788.					
Miller 4-L	126.9±1 1.3	35	124.7±1 2.7	59	Horned bust
M. 1.3-L, 6.1-M, 6.2-M	117.0±1 0.4	29	114.4±1 1.1	65	M. 6.1-M, 6.2-M: Laughing Heads
M. 1.2-C, 1.2-mm	131.0±1 2.1	19	131.6±1 2.1	32	Muttonheads. Mint uncertain.
Machin's Mills, Newburgh, N.Y., mid-1787 to 1790.					
M. 1.1-A, 1.1-VV, 1.4-WW	--	--	116.6±1 0.4	41	1787 M. 1.1 obverse also used for 1788 M. 1-I, aka Vermont RR-39
M. 3-G.1, 13-D, 52-G.1, 52-G.2	115.9±1 3.6	49	111.9±1 4.9	61	M. 13: Childish Face M. 52: Roman Head
M. 3-G.1, 52-G.1, 52-G.2, 101-G.2	--	--	99.6±10 .6	29	Note 6.
M. 32.4-F, 32.4-X.5, 32.4-Z.3, 32.5-aa. DBL, cinquefoils.	--	--	133.9±1 7.2	64	Reused 1788 obverse dies, Miller 16.4 (M. 32.4) and 16.7 (M. 32.5)
M. 32.4-Z.20, 32.8-aa, 50-F. DBL, cinquefoils.	--	--	111.0±1 4.5	29	1788 obverses M. 16.4 (M.32.4,) M. 16.2 (32.8) and M. 17 (M. 50.)
M. 37.6-B, 37.8-LL, 37.12-LL	--	--	141.4±1 1.8	44	Jarvis obverses with CCC reverses.
MBL Triple Leaves Varieties. (Benjamin Buell's Mint, per Breen. See Note 5.)					
M. 2-B, 10-E, 11.1-E, 11.2-K	143.6±1 3.9	115	140.5±1 5.9	103	Triple Leaves heavy
5-P, 9-D, 9-R, 12-Q, 14-H	123.7±1 6.2	120	125.1±1 5.6	107	Triple Leaves light. Note 7.
M. 15-F, 15-R, 15-S	112.1±1 6.5	59	114.1±1 7.8	59	CONNECT obverse

Notes to Table 3.

Note 1. Per Breen, these are Draped Bust Left (DBL) with large letters, small dates and blunt five-pointed stars struck with these obverses: Miller 16.1, 16.2, 16.4, 16.5, 16.6, 28, 29.1, 29.2, 40, 41, and 42.

Note 2. Using obverses 1787 M. 30, 31.1, 31.2, all M. 32 and M. 33 varieties, M. 43.1, 43.2, 44, 49.1, 49.2 and 50. Miller obverse 50 and some of the M.32 obverses are included in the Machin's Mills group.

Note 3. 1787 obverses Miller 17, 18, 19, 21, 24, 45 and 46, each of which is paired with only one reverse, except M. 24, which is paired with three dies. Also Miller 38-GG.
Note 4. 1787 Miller 34-k.3, 34-ff.1, 36-k.3, 36-l.1, 36-ff.2, 37.1-cc.1, 37.2-k.5, 37.3-i, 37.4-k.1, 37.5-e, 37.6-k.4, 37.7-h.2, 37.8-k.2, 37.9-e, 37.11-ff.2, 37.14-cc.2, 37.15-h.2, 38-l.2, 39.1-ff.2, 39.2-ee, 48-k.3 and 56-XX.
Note 5. Breen attributed all of these varieties except M. 9-D and M. 9-R to Benjamin Buell in New Haven, circa April to June 1789. This is probably incorrect, as discussed in Mossman (2013) and in this report.
Note 6. The 1787 Miller 101 obverse (M. 101-G.2, R7+) was used for 1788 M. 101-D (R5,) and previously for the 1778-dated Machin's Mills counterfeit British halfpence Vlack 13-78B (R5) and 13-78C (R9.)
Note 7. Miller 11.3-K (R8, 126.4 gr.) also belongs in this group.
Note 8. Weights are in grains. The \pm value is the standard deviation of the data. Mossman's values are from Tables 6.1 and 6.3 in <i>From Crime to Punishment</i> (2013.)

There is good agreement between the surveys. Mossman's weights for his groups range from four grains heavier to two grains lighter than in the present survey, and on average are one grain heavier. Of note, Mossman included Miller 13-D with M. 3-G.1, 52-G.1 and 52-G.2; while these are all attributed to Machin's Mills, the style of M.13-D is markedly different from that of the other three varieties, as is the weight distribution of its population.

WEIGHTS FROM CATALOGUE LISTINGS VS. THE ANS CABINET

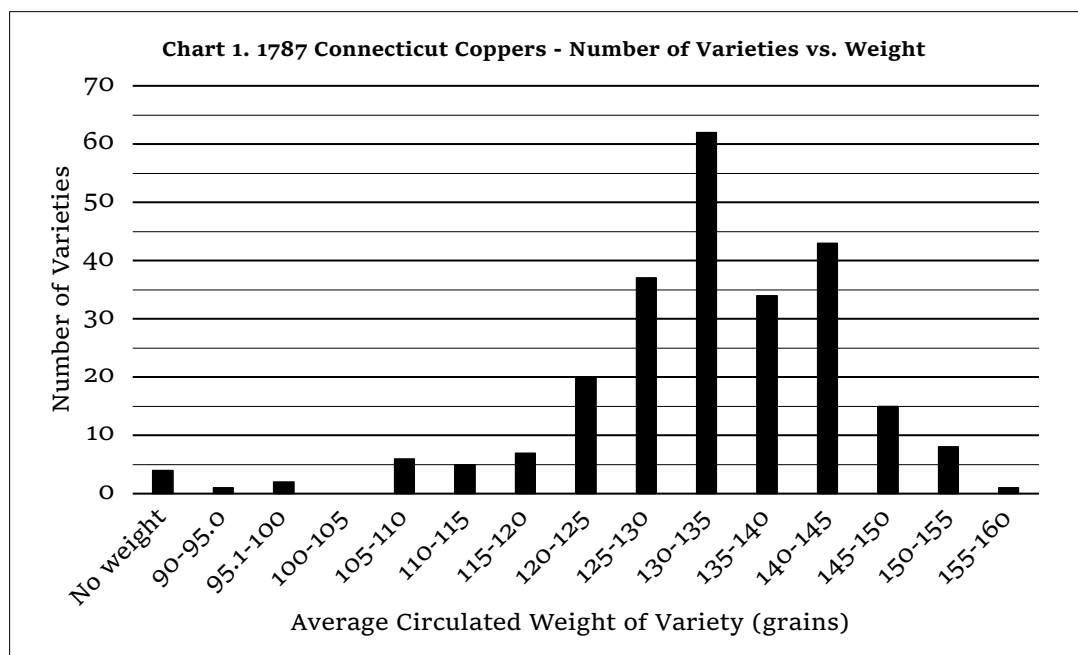
Two hundred and eighteen varieties in the survey are represented by examples from the American Numismatic Society cabinet. Seventy-seven of these had at least five specimens; I compared their data to the specimen weights from the catalogue listings, which had at least twelve weights for each of these varieties. Twenty-one varieties had differences in average weight of two grains or less between catalogues and cabinet, twenty-four were from 2.1 to 6.9 grains heavier in the sale catalogues, and nine were from 2.1 to 6.9 grains lighter. There was a difference of seven grains or more in average weight (about five percent) for the twenty-three varieties listed in Table 4.

Table 4. Varieties with Significant Weight Differences, ANS Cabinet vs. Catalogues					
M. Variety	Difference	Variety	Difference	Variety	Difference
6.2 - M	-7.8 grains	33.2 - Z.5	-7.5	33.40 - Z.1	-15.9
11.1 - E	-9.1	33.2 - Z.12	-8.9	34 - ff.1	-7.0
11.2 - K	-7.7	33.4 - q	-16.4	37.1 - cc.1	-12.1
16.6 - NN.2	-11.8	33.7 - r.2	-9.5	37.4 - k.1	-7.5
17 - g.3	-9.7	33.17 - gg.2	+8.4	37.13 - HH	-9.5
30 - hh.1	-7.9	33.19 - Z.2	-25.5	43.2 - X.4	-7.7
32.3 - X.4	-10.7	33.20 - Z.9	+13.1	50 - F	-9.8
32.5 - aa	+11.0	33.38 - Z.23	+8.0	Plus sign: ANS heavier.	

APPLYING THE DATA

My original motive for compiling this survey was to use low weight as a tool for identifying potential Machin's Mills issues among the 1787 coppers, but at what weight does a variety become a lightweight? Of the 241 varieties with weight data, 206 had average weights less than the authorized 144 grains, 171 averaged less than 140 grains and seventy-seven averaged less than 130 grains. An average weight of 127 grains appears to be a good cutoff for the true lightweights, as

the forty-eight varieties lighter than this value include a high proportion of known counterfeits and scarce die combinations, and relatively few common authorized varieties. The overall distribution of average weights by variety in the present survey is illustrated in Chart 1.



As a trial application of the survey results, I looked at the data for the varieties using the Miller Z.13 reverse, which is paired with five different obverses, with three varieties that are lightweight and relatively scarce. The data for these five draped-bust-left-with-cinquefoil varieties, attributed to the New Haven mint under James Jarvis and Company, are as follows:

Table 5. Varieties Using 1787 Reverse Miller Z.13					
Variety	Avg. wt., gr.	Std. Dev.	Min. Wt.	Max. Wt.	Rarity
33.1-Z.13	128.3	9.9	107.1	145.4	R5-
33.8-Z.13	122.5	8.2	105.9	137.0	R5
33.21-Z.13	119.9	9.3	104.2	135.7	R6
33.32-Z.13	130.8	10.5	105.4	150.4	R1
33.39-Z.13	116.8	7.5	103.8	128.4	R7



Figure 3. Miller 33.1-Z.13. 135.1 grains, 28.2x29.0 mm. Late die states, similar to Perkins:338, with bulging of the reverse at upper left swallowing part of Liberty's branch, three cinquefoils and the DE of INDE. The obverse is bulging at lower left, and there is a prominent die crack from the O in CONNEC to the rim. The obverse of this specimen is weakly-struck at lower right.

The weight and rarity data hint that Miller 33.32-Z.13, the heaviest and most common variety, was coined first, followed by the other combinations in numerical order, M. 33.1-, 33.8-, 33.21- and 33.39-Z.13. The three scarce varieties being significantly lighter than the two more common ones, one could speculate that some or all of them might be Machin's Mills products. However, the actual emission sequence, as best as I can determine from studying the catalogue photos, appears to be completely different, as shown in Table 6.

Miller 33.8-Z.13 and 33.39-Z.13 were the first two varieties struck using this reverse die; closer study is needed to determine which obverse die was actually used first. The Miller 33.1 obverse was used third; this obverse die was paired with only one other reverse, being used previously to strike Miller 33.1-Z.19. The fourth obverse used with Z.13, Miller 33.8, also appears only with the Miller Z.13 and Z.19 reverses. The last new die combination was M. 33.32-Z.13, the most common of the five varieties, and the only reported use of that obverse die. Finally, an additional run of Miller 33.1-Z.13 coppers was struck, with both of the dies in a late state.

Table 6. Obverses in Combination with 1787 Miller Z.13 Reverse					
Order by Weight and Rarity	M. 33.32	33.1	33.8	33.21	33.39
Emission Sequence by Die Condition	M. 33.8 / 33.39	33.1 (1 st use)	33.21	33.32	33.1 (2 nd use)

For Miller 33.1-Z.13, which was both the third-struck and the last-struck variety, I divided the specimens into early and late die state groups, which appear to be equally common, and applied the wear correction factors cited by Damon G. Douglas (Trudgen, ed., 2003,) in research that he performed circa-1950, based on circulated U.S. large cents, to estimate the as-struck weight of each specimen. His corrections were: Extra Fine 1 grain, Very Fine 2gr, Fine 4gr, Very Good 6gr, Good 8gr, Fair 11gr, and Poor 15 grains. The theoretical average as-struck weight of the early die-state specimens was 132.1 grains, and the late-state pieces averaged 129.1 grains, a fairly insignificant difference.

The evidence indicates that the five varieties using the Miller Z.13 reverse were all struck at about the same time, probably by James Jarvis & Company. Their average weights varied up and down over the course of their issue, and the individual weights within each variety vary widely. The variability reflects the inconsistency of the planchet stock, rather than an association with a different mint. While the average weights showed no correlation to emission sequence, the data

also showed a fairly consistent standard deviation in weight, and all varieties have similar minimum-weight specimens, at about 105 grains, which provides at least some supporting evidence that the planchets were prepared using similar methods.

In contrast, the weight data for Miller 32.5-aa and 32.8-aa, struck at Machin's Mills with reused 1788 obverses and the same 1787 reverse, indicates a heterogeneous origin: specimens of M. 32.5-aa ranged in weight from 107 to 182 grains, averaging 133 grains, while those of Miller 32.8-aa ranged from 84 to 132 grains, averaging 113 grains. The standard deviations of the two populations were similar and somewhat high, at 17.4 and 14.6 grains. These two varieties were probably struck from different planchet stock, if not at different times.

FINDINGS

Although this survey made no great new revelations, it hopefully will serve as an aid to future investigation. Some established relationships and prior research were confirmed; among the 1787-dated Connecticut coppers, the emission attributed to the Company for Coining Coppers averages close to the 144-grain authorized weight, while that of Jarvis & Co. is closer to 135 grains, with some heavier varieties. The varieties attributed to Walter Mould's Morristown, N.J. mint are in the 115- to 130-grain range, while the draped bust left triple-leaves varieties, of uncertain origin, include one group weighing about 140 grains, another in the 120- to 125-grain range, and a third (Miller 15-F, 15-R and 15-S) averaging around 113 grains.

There were some distinct divisions in weight among the varieties that are generally attributed to Machin's Mills. The four types using dies credited to James Atlee, Miller 3-G.1, 52-G.1, 52-G.2 and 101-G.2, averaged around one hundred grains, with very low minimum-weight specimens (68 to 96 grains.) The weights of M. 101-G.2 were a little higher than the others. Miller 1.1-A and 1.1-VV averaged about 117 grains; M. 1.4-WW is similar, but only has two specimens in the survey. Minimum weights were 86 to 96 grains for these three varieties, struck using dies believed to have been engraved at Machin's Mills, but not by Atlee. Miller 13-D, with its 'childish face' obverse die attributed to Machin's Mills paired with a CCC-style reverse, was close to the median weight of the Machin's Mills issues, with an average weight of 122 grains; its standard deviation in weight was similar to that of the Machin's issues using Atlee-engraved dies, and was significantly lower than for the varieties using 1788 obverses.

All of the above varieties belong to the broader group of under-127 grain lightweights, as do three of the seven varieties that reuse 1788 obverses with worn 1787 reverses; the scarce varieties 32.8-aa and 50-F, and the rare 32.4-Z.20 have average weights of 109 to 113 grains, with minimum specimen weights of 84 to 105 grains. The other four varieties with 1788 obverses were not particularly light; the average weights of Miller 32.4-F, 32.4-X.5, 32.4-Z.3 and 32.5-aa were 129, 129, 143 and 133 grains, with fairly normal minimum weights of 100 to 113 grains, but high maximum weights of 149 to 182 grains. The Miller 37.6-B, 37.8-LL and 37.12-LL varieties had an average weight of 141 grains, with individual specimen weights ranging from 121 to 178 grains,

with M. 37.6-B somewhat lighter than the other two; Breen attributed these last three types to Machin's Mills on the basis that they combined previously-used obverses attributed to James Jarvis with obverses attributed to the original Company for Coining Coppers; they certainly could have been struck in New Haven by Jarvis or by Benjamin Buell, rather than at Machin's Mills.

Most of the 'Triple Leaves' varieties of 1787 mailed-bust-left Connecticut coppers were ascribed by Walter Breen (1976) to Benjamin Buell's late and short-lived operation in New Haven. Breen listed a series of assumptions, ranging from the thoughts and intentions of Benjamin's father Abel Buell, to the use of old dies and engraving tools, as to why eleven varieties of 1787-dated coppers should be "tentatively ascribed to Benjamin Buell." These assumptions to me seem dubious, a view also expressed by Dr. Mossman in *From Crime to Punishment*. Breen himself states, in an earlier section of *Legal and Illegal Connecticut Mints*, (p. 124,) "I conjecture further that some of the [1787 triple leaves] coins were the work of Benjamin Buell, and that he was promptly bought out by Machin's Mills," implying that Benjamin Buell may have engraved the dies, but the coins were struck in Newburgh. Mossman felt that, contrary to Breen, the CCC most likely issued M. 2-B, 10-E, 11.1-E and 11.2-K, based on die characteristics and on their being close to the authorized weight, and that the source of the other varieties was debatable, with Machin's Mills a strong favorite. A compelling case can be made for a Machin's Mills origin for six of these varieties, Miller 9-D, 9-R, 12-Q, 15-F, 15-R and 15-S; and for two more, Miller 9-E and M. 10-E, which Breen attributed to the CCC-Jarvis transition period in New Haven. Miller 11.1-E may also be a Machin's product; if it was first used by the CCC, the obverse die ultimately found its way to Machin's Mills, where it was used to strike the 1788-dated varieties M. 7-E, 7-F.2 and 7-K. The obverse of 1787 M. 12-Q was similarly reused for 1788 Miller 8-K. The 1787 obverses Miller 9 and 15 are directly linked to Machin's Mills via reverse dies D and F, which were later used to strike Miller 13-D, 32.4-F and 50-F. The weight data for these varieties supports a less controlled production environment than is assumed for the CCC; most are lightweights, with widely ranging specimen weights. Specimens of Miller 9-D and 9-R averaged 123 and 127 grains; those of M. 9-E averaged 142 grains, ranging from 109 to 187 grains, with a standard deviation of 28.4, the highest value for any variety save M. 1.4-WW, which was represented by only two weights. Miller 10-E averaged 141 grains, with individual weights of 117 to 175 grains, and M. 11.1-E averaged 131 grains, with a range of 88 to 159 grains. The rest of these varieties had average weights of 109 to 127 grains; only the lightest, M.15-R had relatively consistent weights, with seven specimens averaging 109 grains and ranging from 100 to 121 grains. The two remaining triple-leaves mailed bust left varieties, Miller 5-P and 14-H, are harder to attribute to a specific mint, as these two varieties were the sole known uses of these dies. Both had average weights of 124 grains, with specimen weight ranges of 97 to 140 grains for Miller 5-P and 93 to 161 grains for M. 14-H, metrics that are at least suggestive of a Machin's Mills origin.

The weights of the Machin's Mills varieties are probably no better an indicator of emission sequence than they were for the varieties with the Miller Z.13 reverse. While there appears to be a general trend toward lighter coins over the course of Connecticut coinage, with some of the 1787-dated varieties probably being among the last coins struck at Machin's Mills, there is no reason to believe that each new issue was lighter than the last. Some of the later batches of coins from Machin's Mills may have been intentionally struck on heavier planchets, depending on market conditions, both in general and at the intended destination of those coins. Some planchets may have been thicker or thinner due to the rolling properties of the copper stock; others may have been struck on blank imported flans that were simply 'available,' with weight being a minor

consideration. There seems to be much truth to the statement made by Henry Miller in the introduction to *The State Coinage of Connecticut* (1920):

The coins of Connecticut vary greatly in weight. Specimens are found weighing not more than 108 grains, while others range from 168 to 184 grains. In some cases the lighter coins are probably counterfeits of the time, but many of the light weight, undoubtedly authentic, are from the same dies as the heavier ones. In fact the weight and the character of the planchet seems to have been regarded as of little importance.

CONCLUSIONS

The use of low average weight as a filter to identify Machin's Mills as the likely mint of some otherwise anonymous varieties appears to be of very limited value. A few suspects do appear in the list; Miller 33.50-Z.24 and 33.35-Z.1 are very light, at 108 and 110 grains (rarity R-9 and R-8, respectively,) but the next-lightest candidate is M. 33.39-Z.13 at 117 grains, a Jarvis product as discussed above. There are an additional twenty varieties in the under-127 grain category that do not already have well-investigated (or specifically stated) links to one of the known mints, and some of these could be Machin's Mills products. Of note in this group are Miller 33.39-Z.20 (120.9 grains, R7) and M. 33.28-Z.20 (126.9 grains, R7+), which are die-linked to M. 32.4-Z.20, a rarity-eight Machin's product with two specimens at 105.3 and 118.5 grains in this survey. The rest of the varieties in this group are mostly of rarity-seven or scarcer, with five rarity-six varieties one of rarity five (Miller 53-FF.) These can all be considered suspects, but so can many heavier varieties.

The weight data may provide supporting evidence for contemporaneous minting of different varieties; similar averages and variability in weight could indicate production from the same batch of planchet stock, but this is a weak form of evidence and should not be considered conclusive, whether or not the weights seem to match. Specimen diameter data in addition to weight would be of great help; diameters were consistently included in the 1988 Norweb II catalogue and in the ANS cabinet listings, but are rarely found elsewhere, even when a coin is described as being struck on an unusually small or large flan. Variations in diameter within a variety could indicate different minting locations or periods, or multiple planchet cutters in use. If a correlation exists between diameter and weight, it might show that some quality control was being attempted. Changes in die orientation (rotation) might provide some clues to production history; this was studied by Damon Douglas for the New Jersey coppers, in addition to weights and diameters.

While my original objective of using weight as a screening tool proved to be largely ineffective, the survey provides some pieces of data that may help fill in the puzzle of 1787 Connecticut copper production, even if the places those pieces fit into are not yet apparent.

Table 1. Weight Data for 1787-dated Connecticut Coppers, by Miller Variety

Variety	Avg. Wt.	Std. Dev.	Min. Wt.	Max. Wt.	No.	R
1.1 - A	117.7	9.3	95.8	146.8	32	R3
1.1 - VV	114.3	9.4	96.7	123.0	7	R6+
1.2 - C	133.2	12.0	118.0	159.3	28	R3
1.2 - mm	120.5	5.4	115.7	125.6	4	R7
1.3 - L	115.7	11.1	92.7	131.9	12	R6-
1.4 - WW	106.8	28.8	86.4	127.1	2	R8
2 - B	144.1	16.1	105.6	170.8	28	R3
3 - G.1	100.0	8.0	87.7	111.4	10	R6
4 - L	124.7	12.7	97.8	158.8	59	R1
5 - P	123.8	12.3	96.6	139.8	11	R6
6.1 - M	113.4	8.5	87.7	133.6	35	R1
6.2 - M	115.7	15.2	77.6	131.3	18	R5-
7 - I	138.9	9.6	124.8	151.9	14	R5+
8 - N	146.1	10.4	125.7	157.1	16	R5
8 - O	147.7	11.1	117.3	170.7	22	R3
8 - a.1	142.8	--	142.8	142.8	1	R8
9 - D	123.1	12.5	110.8	162.2	19	R5
9 - E	142.3	28.4	109.4	186.8	13	R5+
9 - R	127.4	17.6	102.3	156.0	22	R4
10 - E	140.6	15.4	116.5	174.5	22	R5
11.1 - E	131.3	16.7	87.5	158.8	26	R2
11.2 - K	145.5	11.7	118.8	166.8	27	R2
11.3 - K	126.4	10.3	119.1	133.6	2	R8
12 - Q	125.7	13.8	102.3	157.3	27	R3
13 - D	121.8	9.4	103.0	143.4	35	R2
14 - H	124.4	18.9	92.6	160.6	28	R3
15 - F	115.4	19.1	67.7	153.1	39	R3
15 - R	109.2	8.1	99.8	120.8	7	R7
15 - S	112.6	18.1	84.4	132.0	13	R5+
16.1 - m	149.3	14.8	121.6	171.4	27	R4+
16.2 - NN.1	146.7	14.1	118.7	171.8	17	R5
16.2 - NN.2	159.0	7.7	150.2	167.9	5	R7+
16.3 - l.2	140.7	9.6	128.8	152.2	4	R7
16.4 - n	154.7	11.3	135.0	171.3	10	R6
16.5 - n	153.1	12.4	133.1	169.8	14	R5+
16.5 - p	153.3	5.5	145.0	158.4	5	R7-
16.6 - NN.2	146.9	13.6	125.8	165.0	14	R5+
17 - g.3	150.5	11.0	124.2	175.3	34	R3
18 - g.1	133.9	12.3	112.1	155.0	14	R5
19 - g.4	144.2	7.8	132.4	159.1	21	R3
20 - a.2	139.3	5.3	131.1	148.0	17	R5
21 - DD	138.7	9.3	121.4	166.2	17	R5
22 - g.2	140.5	10.6	123.0	153.9	14	R5+
24 - g.3	139.2	10.9	123.4	157.3	10	R6
24 - g.5	141.6	15.7	118.1	168.6	20	R5

Variety	Avg. Wt.	Std. Dev.	Min. Wt.	Max. Wt.	No.	R
24 - FF	150.3	13.2	129.1	175.0	11	R6
25 - b	139.7	7.4	125.6	154.3	20	R3
25 - m	141.0	6.4	131.0	151.2	18	R5+
26 - a.1	140.9	9.1	120.8	151.0	11	R6
26 - AA	137.9	7.2	124.0	147.4	22	R5
26 - kk.1	132.1	9.2	117.2	147.1	16	R5
27 - a.1	146.3	8.5	132.8	157.7	12	R5
28 - m	134.3	17.0	113.7	166.4	14	R5
28 - n	139.4	7.9	127.0	153.5	10	R6+
28 - o	136.0	11.6	115.0	155.0	12	R6
29.1 - a.2	128.6	4.9	120.5	136.3	12	R6
29.1 - n	139.8	8.9	122.5	155.9	10	R6
29.1 - p	141.6	9.0	119.9	157.6	17	R5
29.2 - N	143.1	12.5	128.2	158.0	9	R6
29.2 - o	140.1	5.2	132.4	149.2	12	R5+
30 - X.1	129.0	12.1	107.3	149.6	13	R6
30 - hh.1	135.7	13.5	111.1	167.1	37	R2
31.1 - r.4	135.0	12.3	109.0	160.6	30	R2
31.1 - gg.1	133.7	13.6	106.9	168.1	31	R3
31.2 - r.3	139.1	10.5	114.8	165.1	40	R1
32.1 - X.3	129.2	7.8	114.6	144.7	17	R4
32.2 - X.1	136.7	14.4	112.8	162.6	26	R3
32.2 - X.2	132.2	12.4	105.8	150.0	24	R5-
32.2 - X.4	131.6	11.2	106.8	147.5	17	R5+
32.3 - X.4	140.1	13.4	118.8	178.9	31	R2
32.4 - F	128.7	18.1	100.5	148.7	8	R6+
32.4 - X.5	129.4	12.4	112.5	162.2	15	R5
32.4 - Z.3	142.8	18.6	111.9	179.0	15	R5
32.4 - Z.20	111.9	9.3	105.3	118.5	2	R8
32.5 - aa	133.0	17.4	106.6	182.4	26	R4
32.6 - X.6	140.2	8.6	125.8	157.2	12	R6
32.7 - X.1	134.0	7.2	125.0	146.5	12	R5
32.8 - aa	113.1	14.6	84.0	132.2	13	R6
33.1 - Z.13	128.3	9.9	107.1	145.4	25	R5-
33.1 - Z.19	120.5	8.8	104.3	138.1	17	R5
33.2 - Z.5	129.2	10.1	106.9	150.2	36	R1
33.2 - Z.12	127.2	9.2	103.7	140.4	30	R1
33.2 - Z.17	132.0	7.6	121.7	144.0	10	R6
33.2 - Z.21	134.1	9.3	120.5	149.4	15	R6-
33.2 - Z.22	135.5	12.9	109.2	153.7	12	R6
33.3 - W.1	135.2	8.5	112.0	152.2	28	R4
33.4 - Z.2	130.9	12.1	107.6	145.7	8	R6+
33.4 - q	133.8	15.1	108.0	162.8	18	R5
33.5 - T.2	131.3	15.1	96.3	165.9	22	R5-
33.6 - KK	138.6	10.4	118.5	155.7	33	R2

Table 1. Weight Data for 1787-dated Connecticut Coppers, by Miller Variety (Continued)

Variety	Avg. Wt.	Std. Dev.	Min. Wt.	Max. Wt.	No.	R
33.7 - Z.9	--	--	--	--	--	R8/9
33.7 - Z.10	127.0	--	127.0	127.0	1	R8
33.7 - r.2	134.9	11.8	100.5	156.2	42	R1
33.7 - r.4	133.8	6.2	125.0	148.3	15	R5+
33.8 - Z.13	122.5	8.2	105.9	137.0	24	R5
33.8 - Z.19	122.9	11.5	102.0	137.3	11	R6+
33.9 - s.2	133.9	11.9	109.9	163.0	31	R2
33.10 - W.6	144.0	21.9	103.6	167.6	8	R7-
33.10 - Z.7	138.1	12.5	112.0	151.4	10	R6
33.10 - Z.8	143.3	15.2	118.5	169.6	23	R5
33.11 - Z.18	131.4	7.1	116.6	145.4	26	R5-
33.11 - gg.1	127.7	8.2	118.8	142.3	12	R6-
33.12 - W.3	130.9	9.2	119.9	145.2	9	R7-
33.12 - Z.10	133.0	--	133.0	133.0	1	R9
33.12 - Z.16	130.4	7.9	118.6	145.4	18	R5
33.12 - Z.21	129.0	4.4	124.6	136.6	6	R7
33.12 - Z.24	129.4	8.3	116.6	145.0	12	R6+
33.13 - Z.1	124.3	11.9	102.9	151.6	15	R6-
33.13 - Z.6	127.2	10.1	104.6	142.0	17	R5
33.13 - Z.7	140.3	16.6	98.4	167.1	19	R5
33.13 - q	123.3	18.9	97.3	147.0	6	R7
33.13 - ff.1	128.3	21.8	106.2	149.8	3	R8
33.13 - hh.2	124.5	14.7	105.9	147.2	10	R6+
33.14 - Z.2	153.5	--	153.5	153.5	1	R8/9
33.14 - Z.14	136.4	18.0	92.9	164.0	16	R5
33.15 - r.1	133.0	11.0	108.5	149.2	34	R2
33.16 - T.2	121.5	14.9	97.9	138.1	5	R7
33.16 - Z.15	132.7	8.3	119.8	153.4	24	R4
33.16 - l.2	127.6	12.5	109.6	152.2	13	R5
33.17 - r.1	131.2	9.2	112.0	154.2	30	R1
33.17 - r.5	125.1	11.2	106.7	140.1	10	R6
33.17 - gg.2	137.2	12.1	112.9	158.6	28	R5
33.18 - Z.24	126.4	12.2	109.2	136.7	4	R7
33.19 - Z.1	130.4	16.1	100.2	157.4	25	R4
33.19 - Z.2	127.4	18.6	71.3	150.8	20	R5
33.19 - Z.4	121.0	11.5	107.7	139.7	6	R7
33.19 - q	128.4	10.8	113.7	143.9	9	R7-
33.20 - Z.9	131.8	16.8	89.1	163.1	21	R5
33.20 - Z.11	136.4	15.9	107.3	152.2	6	R6+
33.21 - Z.13	119.9	9.3	104.2	135.7	11	R6
33.21 - k.4	134.4	1.8	133.0	137.0	4	R7-
33.21 - EE	142.9	4.9	139.4	146.3	2	R7
33.22 - II	125.9	--	125.9	125.9	1	R9
33.23 - Z.4	132.3	14.8	90.1	156.3	16	R5
33.23 - hh.2	131.9	13.0	115.0	151.7	12	R6
33.24 - Z.10	125.0	5.9	117.3	133.0	5	R7+
33.25 - W.3	134.1	10.6	112.3	148.9	12	R6
33.25 - Z.10	129.2	13.8	104.6	153.5	12	R6
33.25 - Z.24	128.6	9.4	115.4	143.2	11	R6
33.26 - W.3	131.8	7.2	124.0	146.3	10	R6+
33.26 - W.5	128.7	10.2	115.0	139.7	4	R7+
33.27 - Z.16	138.7	--	138.7	138.7	1	R9
33.27 - r.4	146.5	10.7	128.9	170.2	13	R6
33.28 - Z.7	--	--	--	--	--	R9
33.28 - Z.11	138.1	13.3	108.5	158.6	16	R5+
33.28 - Z.16	146.1	11.2	129.4	166.0	23	R4
33.28 - Z.20	126.9	5.4	121.0	134.0	4	R7+
33.29 - Z.7	144.0	13.3	125.1	174.4	18	R5
33.29 - Z.25	--	--	--	--	--	R7+
33.29 - s.1	130.0	22.3	114.2	145.8	2	R7+
33.29 - gg.1	130.5	11.9	111.1	154.7	20	R5
33.30 - EE	143.2	11.9	115.3	158.0	13	R6
33.30 - SS	143.9	15.6	122.1	170.0	6	R7
33.31 - gg.2	136.5	11.0	116.0	155.3	19	R5
33.32 - Z.13	130.8	10.5	105.4	150.4	31	R1
33.33 - Z.3	133.9	11.0	115.8	153.1	14	R5
33.33 - Z.11	134.0	7.5	121.8	146.1	13	R6-
33.34 - W.2	135.0	9.7	118.4	158.1	17	R6-
33.34 - Z.3	136.7	8.9	125.0	160.8	16	R5
33.34 - Z.11	136.9	8.2	123.3	162.9	23	R5-
33.35 - Z.1	109.5	--	109.5	109.5	1	R8
33.35 - Z.9	131.1	18.8	117.0	163.7	5	R7
33.36 - T.1	143.0	12.9	125.3	165.1	13	R5+
33.36 - T.2	127.6	10.3	106.3	144.6	30	R3
33.36 - T.3	148.3	--	148.3	148.3	1	R8
33.36 - SS	144.0	18.6	123.5	169.6	5	R7+
33.37 - Z.9	130.5	10.8	106.5	159.1	24	R5
33.37 - Z.11	133.2	1.1	132.4	134.0	2	R7
33.38 - Z.1	129.8	13.4	111.0	151.1	15	R5+
33.38 - Z.6	134.2	21.6	79.9	162.8	18	R5+
33.38 - Z.18	118.6	0.8	118.0	119.1	2	R7+
33.38 - Z.23	132.3	9.4	120.4	150.8	19	R5
33.38 - gg.1	123.8	12.1	105.6	139.5	12	R6-
33.39 - Z.13	116.8	7.5	103.8	128.4	8	R7
33.39 - Z.20	120.9	10.0	108.6	137.8	6	R7
33.39 - s.1	133.5	10.2	110.2	153.1	22	R4
33.40 - Z.1	129.0	24.5	85.2	177.8	20	R5
33.40 - Z.2	141.4	11.0	124.1	160.5	12	R6
33.41 - Z.11	135.4	15.7	118.8	161.0	9	R7-
33.42 - Z.2	120.5	10.1	105.4	135.4	8	R7-

Table 1. Weight Data for 1787-dated Connecticut Coppers, by Miller Variety (Continued)

Variety	Avg. Wt.	Std. Dev.	Min. Wt.	Max. Wt.	No.	R
33.43 - q	133.8	10.1	120.1	149.5	15	R5
33.43 - hh.2	128.8	15.4	110.6	168.2	20	R5
33.44 - W.3	132.6	11.3	111.2	148.4	14	R6-
33.45 - W.2	132.6	14.6	109.0	156.0	12	R6
33.46 - Z.21	137.2	11.3	120.9	145.8	4	R7+
33.46 - Z.22	125.6	8.9	119.3	131.9	2	R8
33.47 - TT	124.0	--	124.0	124.0	1	R8
33.48 - Z.25	134.8	7.3	126.6	140.5	3	R8
33.49 - Z.7	150.9	--	150.9	150.9	1	R9
33.50 - Z.24	108.1	--	108.1	108.1	1	R9
34 - k.3	139.3	13.2	124.2	148.1	3	R7
34 - ff.1	143.7	10.1	125.6	165.9	25	R5
36 - k.3	139.1	7.1	132.1	146.3	3	R7
36 - l.1	142.1	10.8	120.5	159.1	22	R5
36 - ff.2	139.8	10.8	120.8	154.1	6	R6+
37.1 - cc.1	150.0	13.2	109.9	168.0	23	R4
37.2 - k.5	146.4	9.5	131.2	163.2	17	R5
37.3 - i	144.6	13.0	124.6	181.5	27	R3
37.4 - k.1	140.2	9.2	122.5	156.8	23	R3
37.4 - RR	129.3	--	129.3	129.3	1	R9
37.5 - e	141.6	15.6	110.3	167.7	30	R4
37.6 - B	133.4	8.4	121.0	143.1	5	R7
37.6 - k.4	140.6	14.4	120.0	182.0	20	R5
37.7 - h.2	130.2	11.1	112.4	148.0	11	R6
37.8 - k.2	135.9	17.8	100.7	162.4	23	R5
37.8 - HH	144.5	14.4	120.6	180.0	15	R5+
37.8 - LL	140.8	11.6	121.4	178.1	28	R4+
37.9 - e	143.1	20.2	102.0	179.5	19	R5+
37.10 - RR	132.7	11.7	105.1	149.1	14	R6
37.11 - ff.2	145.6	10.9	123.9	164.4	19	R5
37.12 - LL	146.5	12.1	131.2	177.2	11	R6
37.12 - TT	137.2	12.0	109.3	155.8	13	R6
37.13 - HH	133.4	15.5	108.2	164.5	22	R5
37.14 - cc.2	132.0	18.0	98.5	165.0	14	R6
37.15 - h.3	132.7	8.7	119.6	140.1	5	R7
38 - l.2	136.5	9.6	120.1	154.3	23	R4
38 - GG	148.1	7.8	134.3	162.8	24	R4
39.1 - h.1	144.0	9.7	125.4	163.4	18	R5
39.1 - ff.2	134.4	11.4	119.6	163.0	16	R5+
39.2 - ee	134.3	10.7	111.9	156.3	25	R4
40 - N	143.6	7.1	131.8	152.9	11	R6
40 - kk.1	142.8	10.8	130.6	162.3	10	R6
41 - ii	141.5	8.1	125.7	153.0	27	R4
42 - o	139.3	4.4	132.3	145.0	6	R7
42 - kk.2	144.6	7.9	132.7	161.1	20	R5-
43.1 - Y	136.0	10.5	114.3	152.0	32	R2
43.2 - X.4	135.7	12.0	109.6	150.2	17	R5
44 - W.4	132.9	9.4	109.1	146.1	22	R4+
44 - W.5	141.1	7.6	132.7	154.2	10	R6+
44 - Z.10	134.1	10.9	111.1	149.8	13	R6
45 - CC	134.3	9.0	117.7	149.4	21	R5
46 - BB	141.5	9.0	127.3	163.3	19	R5
47 - a.3	141.5	6.5	131.6	152.9	12	R6+
48 - g.5	130.3	17.9	91.7	153.1	17	R5
48 - k.3	124.1	13.9	107.2	139.9	6	R7
49.1 - Z.1	123.2	14.9	93.8	141.8	7	R7-
49.2 - Z.1	153.2	--	153.2	153.2	1	R9
49.2 - Z.26	133.3	--	133.3	133.3	1	R9
49.2 - Z.27	--	--	--	--	--	R9
50 - F	109.0	15.5	88.7	141.9	14	R6
52 - G.1	98.6	6.9	89.4	111.1	13	R6
52 - G.2	93.7	22.8	67.9	111.1	3	R8
53 - FF	122.2	15.2	98.4	154.7	14	R5
56 - XX	128.5	12.8	117.7	147.0	4	R7
101 - G.2	108.4	17.3	95.8	128.1	3	R7+

Compiled by K. Patton, February 12, 2021.

Notes to Table 1.	
Variety	Comments - catalogues are listed in the bibliography.
Miller 3-G.1	Taylor:2399 (89.7 grains) was later listed at 135.9 gr. as Perkins:257. The higher weight was excluded from the survey.
M. 8-a.1	Taylor Lot 2412 was misattributed as 8-O.
M. 24-g.5	Twin Leaf:8176 is possibly same as Picker Reference:2648 (not plated) and was excluded from the survey. Both 131 gr.
32.2-X.6?	Hessberg:1422, 140 gr. was listed as this unknown variety. It appears to be 32.2-X.2, and was included in that group in the survey.
M. 32.4-Z.3	Scherff:2336 (part.) 112.1gr, is probably same as Picker Reference:2669. Excluded from survey.

Notes to Table 1.	
Variety	Comments - catalogues are listed in the bibliography.
M. 32.9-X.7	Delisted variety. Three or four reported specimens are all misattributed 1788 M. 16.1-H (see Jeff Rock, C4 Newsletter, Spring 2011.)
33.11-Z.19?	One specimen in the ANS cabinet was misattributed as this unknown die combination. (Excluded.)
33.12-Z.5?	Hessberg:1453, 129 gr., not plated, was listed as this unknown variety. It was excluded from the survey.
33.23-Z.24?	Taylor:2559, part, included this unknown variety, 119.5 grains. Excluded from survey.
M. 33.24-Z.10	Taylor:2564 (not plated) was misattributed as 33.25-Z.10 (ref.: 2009 Stack's Americana Sale:7363.) It was included in the M. 33.24-Z.10 group.
M. 33.25-Z.10	SLT:7300 (147.0 gr) notes that it is Norweb II:2560 (133.9 gr,) which has "incorrect photos?" They appear to be two different examples of M. 33.25-Z.10 and both weights were kept in the survey.
M. 33.36-T.2	Twin Leaf:8295, 115.5 is probably the same as Taylor:2593 (part, not plated, 115.6 gr.) Excluded from survey.
M. 33.37-Z.9	SLT:7331 (140.8 gr.) appears to be the same as Perkins:422. Excluded from survey.
33.37-r.4?	Oechsner:1144 is catalogued as this unknown variety. It is actually M. 33.27-r.4 (included as such.)
M. 33.40-Z.2	Scherff:2439, 128.8 gr is possibly the same as Taylor:2607 (129.0 gr, not plated) and was excluded from the survey.
M. 37.3-i	2002 C4:323 (141.0gr) is possibly the same as Picker Reference:2702 (141.1 gr, not plated) and was excluded from the survey.
M. 37.6-B	SLT:7364 is the same as Taylor:2634 and Perkins:452 (plated.) The specimen was included once in the survey. All listings 134.4 grains.
M. 37.8-k.2	Twin Leaf:8327 (112.2 gr) is probably the same as Taylor:2636 (part, not plated, 112.3 gr) and was excluded from the survey.
M. 37.8-LL	Twin Leaf:8326 (134.6gr) is probably the same as Taylor:2641 (part, not plated, 134.8 gr) and was excluded from the survey.
M. 37.10-RR	SLT:7374 and 7375 were listed as 37.10-RR.1 and 37.10-RR.2; they are both M. 37.10-RR. See note for 56-XX.
M. 40-kk.1	Scherff:2458 (157.3 gr) is probably the same as Norweb:2598 (part, not plated, 157.2 grains,) and was excluded from the survey.
M. 43.1-Y	Twin Leaf:8348(142.4gr) is the same as Perkins:478 (142.3gr.) Excluded from survey.
M. 55-F	Delisted variety. Miller 55-F is the same as M. 32.4-F.
M. 56-XX	Miller 56-XX is sometimes listed as 56-xx, and sometimes as 56-RR.2. The RR and XX reverses have similar but not identical punctuation. There is no RR.1, RR.2 or xx reverse die.

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Howes, Jack, James Rosen and Gary Trudgen: *The History and Coinage of Machin's Mills*. Colonial Coin Collectors Club, 2020.

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McDowell, Christopher: "Captain Thomas Machin and the Last Connecticut and Vermont Coppers." (C4 Newsletter V.20 No.2, Summer 2012.)

Miller, Henry Clay: *The State Coinage of Connecticut*. American Numismatic Society, New York, 1920. (Sanford J. Durst reprint, New York, 1981.)

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--- *Money of the American Colonies and Confederation*. American Numismatic Society, New York, 1993.

--- *From Crime to Punishment: Counterfeit and Debased Currencies in Colonial and Pre-Federal North America*. American Numismatic Society, New York, 2013.

Trudgen, Gary A. (ed.,) *The Copper Coinage of the State of New Jersey, Annotated Manuscript of Damon G. Douglas*. American Numismatic Society, New York, 2003.

CATALOGUES, INITIAL SEARCH

March 26, 1987	The Frederick B. Taylor Collection. Auctions by Bowers & Merena, Inc.
March 25, 1988	The Norweb Collection, Part II. Auctions by Bowers & Merena, Inc.
September 9, 1988	The Estate of Herbert M. Oechsner. Stack's.
June 20, 1991	The Edward Hessberg Collection. Stack's.
July 22, 1992	The Richard Picker Reference Collection of Connecticut Coppers. Coin Galleries (Stack's.)
January 12, 2000	The George C. Perkins, Esq. Collection. Stack's.
November 16, 2002	C-4 Eighth Annual Convention Sale, featuring the Jesse Patrick Collection of Connecticut Coppers. M&G Auctions.
May 10, 2005	The John J. Ford, Jr. Collection, Part IX. Stack's.
March 3, 2010	The Peter Scherff Collection of Colonial Coins (part of the Eliasberg, Jr. and Krause sale.) Stack's.
January 25, 2012	Collection SLT, in the January 2012 Americana Sale. Stack's Bowers.
November 16, 2012	C-4 Convention Sale Featuring the Ted L. Craige Collection, Part 1. Baltimore, Stack's Bowers.
January 22, 2013	The Ted L. Craige Collection, Part 2, in the January 2013 Americana Sale. New York, Stack's Bowers.
May 16, 2014	Selections from the Eric P. Newman Collection, Part IV.

November 4, 2016	Heritage Auctions. C4 Baltimore Auction, including the Anderson-Gleckler Collection of Connecticut Coppers
March 1, 2019	The Twin Leaf Collection of State Coinage – Conn. and Mass. Coppers. Stack's Bowers.
November 15, 2019	The Robert M. Martin Collection of United States Colonial Coins. Stack's Bowers.

CATALOGUES, SECOND ROUND OF SEARCHING

October 21, 1995	C-4 First Annual Convention, Pennsauken, NJ. The John M. Griffie Sale. M&G Auctions (McCawley and Grellman.)
November 18, 2000	C-4 Sixth Annual Convention, Boston. M&G Auctions.
December 2, 2006	C-4 Twelfth Annual Convention, Featuring the Bob Lomphey, Jr. Collection of Connecticut Coppers. Boston, M&G Auctions.
November 21, 2009	C-4 Fifteen Annual Convention, Boston. M&G Auctions.
November 13, 2010	C-4 Sixteenth Annual Convention, featuring the Donn Pearlman and Thomas Wolf Connecticut Coppers Collections. Boston, M&G Auctions.
Various Dates	Stack's Bowers online archive, Heritage Auctions online archive

CATALOGUES, FINAL SEARCH

October 12, 1996	C-4 Second Annual Convention, Pennsauken, NJ. The Scott Barnes Sale. M&G Auctions.
November 8, 1997	C-4 Third Annual Convention, Boston. M&G Auctions.
November 21, 1998	C-4 Fourth Annual Convention, Boston. M&G Auctions.
November 6, 1999	C-4 Fifth Annual Convention, Boston. M&G Auctions.
November 10, 2001	C-4 Seventh Annual Convention, Boston. M&G Auctions.
November 8, 2003	C-4 Ninth Annual Convention, Boston. M&G Auctions.
November 13, 2004	C-4 Tenth Annual Convention, Boston. M&G Auctions.
November 19, 2005	C-4 Eleventh Annual Convention, Boston. M&G Auctions.
December 1, 2007	C-4 Thirteen Annual Convention, Boston. M&G Auctions.
November 15, 2008	C-4 Fourteenth Annual Convention, Boston. M&G Auctions.
November 1, 2020	The Donald G. Partrick Collection, 1785-88 Connecticut Coppers. Dallas, Heritage Auctions.
November 11, 2020	The E Pluribus Unum Collection, Part 2. Newport Beach, Cal. Stack's Bowers.
January 23, 2021	The Neil Rothschild Collection. Conroe, Texas. Early Cents Auctions.



ANNOUNCEMENTS AND ERRATA

C4 Membership Dues

Annual dues are currently \$30.00 for Regular Membership (\$40 if residing outside the United States) and \$10.00 for Junior Membership (under 18 years of age; \$15 if non-US resident.) They are payable on a calendar year basis... due January 1. The year through which you are paid appears after your name on the mailing address label on the *C4 Newsletter* envelope. Life Memberships can be purchased for 25 times the annual membership cost, or \$750.00. You may mail checks (made out to "C4") to: Charlie Rohrer, C4 Treasurer; P.O. Box 25; Mountville, PA 17554

Thank you for paying in a timely manner... It makes his job easier and will be much appreciated!

C4 25th Anniversary Medals



A limited number of medals are still available. Individual copper medals can be purchased for \$13, and silver (one ounce, .999 silver) medals can be purchased for \$43, or a set containing one of each for \$48. These prices include postage.

If included along with an initial order, above, additional individual copper and silver medals are \$8 and \$35, respectively. Additional sets can be purchased for \$40 per set as long as they are included with an initial order, to save on postage.

Checks should be made payable to C4 and mailed to Charlie Rohrer, C4 treasurer, P.O. Box 25, Mountville, PA, 17554.

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## **Newman Numismatic Portal Symposium Videos Available**

Videos from the recently conducted Newman Numismatic Portal (NNP) Symposium are now available on the Newman Numismatic Portal at <https://nnp.wustl.edu/library/multimediatdetail/539070>. The NNP Symposium, held August 28-30, featured an online series of numismatic presentations over a three-day period. The event, which drew over a thousand registrants, included forty-one sessions and presented a wide array of content, including American, world, and ancient numismatics. This event was produced by Lianna Spurrier of Numismatic Marketing, under sponsorship of the Eric P. Newman Numismatic Education Society.



Attendee input was enthusiastic, with one viewer noting “Drive time was very short, parking was free, food options were plentiful and reasonably priced, and overnight accommodations were like sleeping in my own bed.” Another commented “I just want to tell you what a fabulous event the Symposium was, as I’m sure you have heard a hundred times. It was an oasis in the COVID-19 desert. It got the coin collecting juices flowing again for those of us hunkered down waiting for the next show.” Other comments received included “These last three days were the closest I’ve come to having a coin convention experience since before the coronavirus hit” and “The NNP hit a homerun with its effort. The symposium was such a success that I hope the NNP makes this an annual event.”

Popular sessions included Greg Rohan, of Heritage Auctions, who discussed the impact of the COVID epidemic on the numismatic market. Charles Morgan presented on “Five Ways to Modernize the Rare Coin Market,” while Matthew Tavory and Isaiah Hagemen hosted a well-received discussion on detection of counterfeit slabs. Rounding out the most attended presentations, Robert Rodriguez spoke on “The 1792 Morris ‘So-Called’ Silver Center Cent.”

The growth of online numismatics mirrors that of nearly every other industry, and the unique circumstances of the present epidemic make events such as Newman Numismatic Portal Symposium particularly appropriate in the present environment. “I was encouraged to see the numismatic community come together in this way,” noted Len Augsburg, Project Coordinator for the Newman Numismatic Portal. Andy Newman, Trustee of the Eric P. Newman Numismatic Education Society, commented “There appears to have been an appetite for numismatic content presented in this format, so we are encouraged to continue facilitating such events and welcome suggestions for improvement.”

Comments regarding this or future events are welcome by email, at [NNPCurator@wustl.edu](mailto:NNPCurator@wustl.edu).



## **THE C4 NEWSLETTER IS ON THE NEWMAN NUMISMATIC PORTAL!**

Past issues of The C4 Newsletter, and a plethora of other important numismatic resources are now available online, through The Newman Numismatic Portal, at:

[www.archive.org/details/newmannumismatic](http://www.archive.org/details/newmannumismatic)

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### **RESOURCE FOR THE C4 NEWSLETTER**

Our C4 Newsletter now has an index available on our website at [www.colonialcoins.org](http://www.colonialcoins.org). There are two indexes: one by author and a second by topic/title. This is a beginning and the index will improve over time. We have intentions of updating the index within a week or two of every issue being shipped. We ask past authors and contributors to the C4N to please review their work in the index and forward any corrections/additions/suggestions to Ray Williams at [njraywms@optonline.net](mailto:njraywms@optonline.net).

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### **Important Vermont Ryder-3 Study**

Mark Vitunic and Jim Glickman are conducting a study of Vermont Ryder-3 specimens with planchet/striking peculiarities such as oblongness and partial doubling as described in Carlotto. This effort will hopefully lead to a C4N article. We are asking C4 members to please email us photos + weight of ANY Ryder-3 specimen that you own or are aware of which is NOT currently listed in the HA/SB archives. Your anonymity guaranteed. Thank you! [mvitunic@gmail.com](mailto:mvitunic@gmail.com), [jamesglickman1@gmail.com](mailto:jamesglickman1@gmail.com).

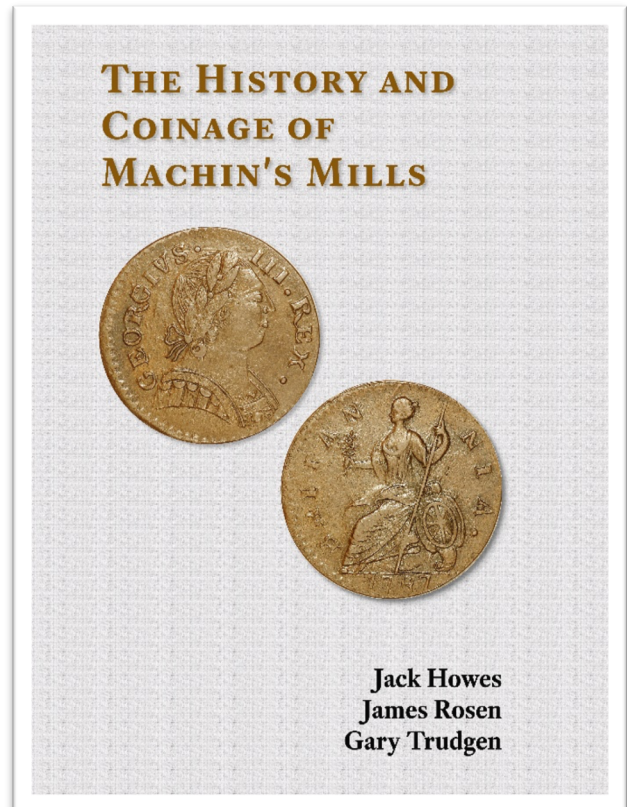
**\*\*\*\*\***

The American Numismatic Society lacks just 10 pieces of Continental Currency for a complete set. If you would like to donate to the study collection, please contact Curator of the Americas, Jesse Kraft, at [jkraft@numismatics.org](mailto:jkraft@numismatics.org). The missing notes are as follows:

February 26, 1777, \$2, Friedberg.55 — May 20, 1777 \$4 Friedberg.65 — May 20, 1777, \$5, Friedberg.66 — May 20, 1777, \$7, Friedberg.68 — May 20, 1777, \$8, Friedberg.69 — April 11, 1778, \$6, Friedberg.73 — April 11, 1778, \$7, Friedberg.74 — April 11, 1778, \$8, Friedberg.75 — April 11, 1778, \$20, Friedberg.76 — April 11, 1778, \$40, Friedberg.78

The Colonial Coin Collectors Club (C4) announces the latest in its series of publications – **The History and Coinage of Machin's Mills** by Jack Howes, James Rosen, and Gary Trudgen.

When writing a book about coins that have been surrounded for generations by mystery and controversy regarding their sponsors, manufacturers, places and dates of origin, it became inherently obvious that we needed to describe these coins in detail and examine the lives and times of the personalities responsible for their creation during the closing years of the Confederation Period. Not only was it essential to clear up old ideas and to set the records straight, but it seemed necessary to expand our thinking about these coins which have weaved their way into our consciousness of pre-federal coppers.



So begins this new book on the coinage of Machin's Mills. The work, in octavo, is casebound and sewn with a photographic laminate cover, 286 pages and is profusely illustrated in color. It is available immediately for \$65 (plus shipping) from either Charles Davis, P.O. Box 1, Wenham, Mass 01984 or Kolbe & Fanning Numismatic Booksellers LLC., 141 W. Johnstown Rd. Gahanna, OH 43230.

**David Fanning on this new work:**

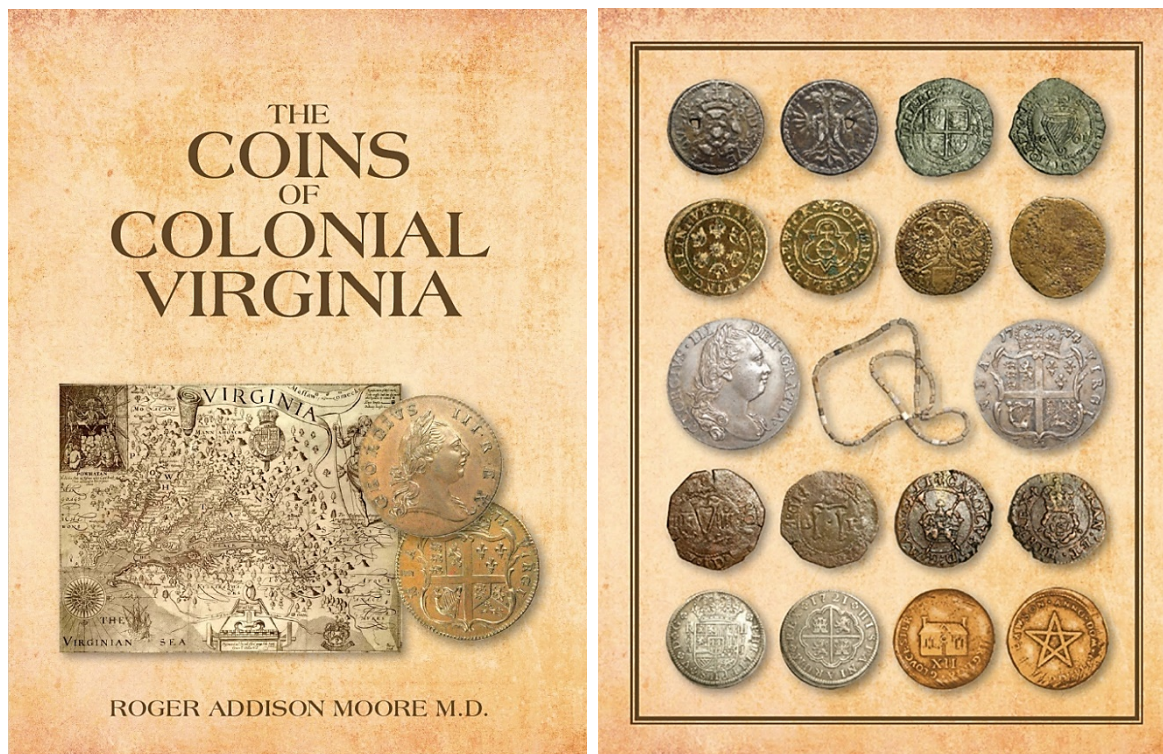
"The first book-length study of the intriguing series of coppers issued by various parties associated with Thomas Machin. Includes coverage not only of the series collected as Machin's Mills coppers, but also of those Vermont, New Jersey, Connecticut, and Massachusetts coppers that are linked to this New York operation."

**Charles Davis comments on a draft copy:**

"It is obvious that the book is well researched, the photos appear top notch, and the variety descriptions exhaustive--it is an impressive piece of work."

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***C4 Proudly Announces a New Book  
By Roger A. Moore!***



The growth and development of Virginia into one of the most important North American colonies can be traced by the economic evolution of the Dominion State as it attempted to gain the necessary hard currency needed for commerce. The history surrounding the introduction of various coinages and the use of tobacco as a commodity currency over the 150 years leading up to the final authorization of the production of Virginia halfpence in 1773 is fascinating. Equally as absorbing are the twists, turns and dead ends encountered by the Virginia colonists as they sought authorization from the English Crown for their own coinage. It is ironic that the long-desired copper Virginia halfpence finally provided to Virginia under Warrant from King George III became available to the colonists only fifty days before the beginning of the American Revolution.

In addition to exploring the historic context in which colonial Virginia struggled to obtain hard currency, methods are provided for attributing and collecting the 30 known die varieties of the 1773 copper Virginia halfpence. The book also enumerates the specifics of the Virginia halfpence metrology, rarity, and grading, as well as their numerous forgeries, facsimiles, fantasies and oddities. Virginia halfpence can be appreciated and collected in nearly uncirculated condition and are important additions to any collection of American colonial coins.

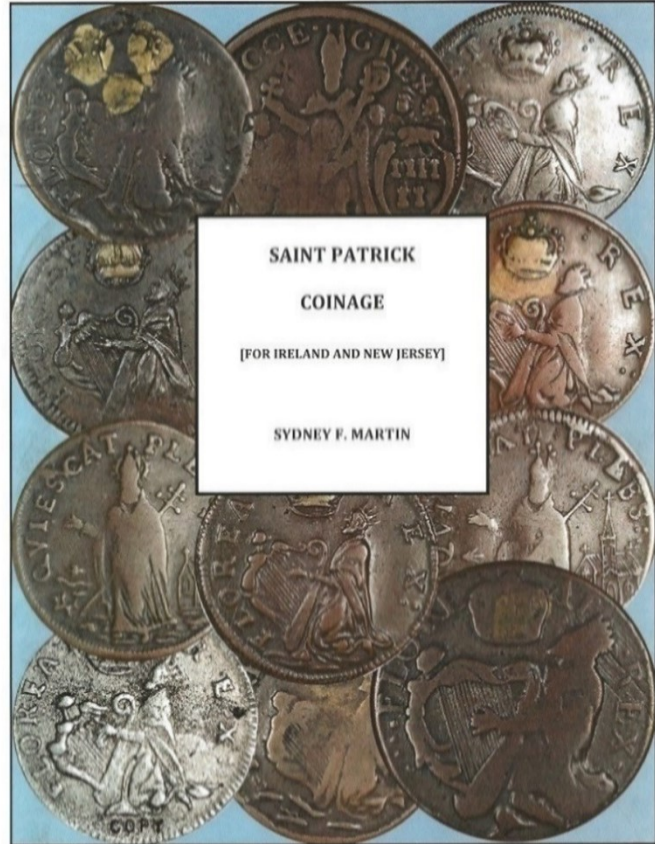


Price: \$95. Available beginning at the C4 Convention, November 14-17, 2019, from Charles Davis. Orders may be placed at P. O. Box 1; Wenham, MA 01984. Telephone: (978) 468 - 2933; Fax (978) 468 - 7893; E-mail: numislit@aol.com; Business Hours: Monday - Friday 8:00 – 5:00 EST.



## The Colonial Coin Collectors Club Released The Definitive Book on the St. Patrick Coinage by Sydney F. Martin

Boston – May 27, 2018, The Colonial Coin Collectors Club, (C4,) released Sydney F. Martin's latest book, *Saint Patrick Coinage for Ireland and New Jersey*. This is the fourth book published by C4 that has been written by Syd Martin, the former editor of the *C4 Newsletter* and current President of The American Numismatic Society. His other works are *The Rosa Americana Coinage* of William Wood, *The Hibernia Coinage* of William Wood, and *French Coinage Specifically for Colonial America*. These books are all considered the standard references for these series today. Syd's latest work covers a series that has long vexed researchers on both sides of the Atlantic – the St. Patrick coinage. In researching this book Syd traveled to Ireland and spent many hours in the archives in New Jersey in search of clues, discovering some fascinating answers and developing several new theories regarding the coinage. This coinage has long been shrouded in mystery as to when and where it was made, and for what purpose. Syd discusses the theories that have been proposed so far, and the pros and cons of each plus some exciting new theories of his own.



According to Lou Jordan, the Curator of Numismatic Collections for the University of Notre Dame, this book is “groundbreaking!” Phil Mossman, former editor of *The Colonial Newsletter (CNL)*, writes that “Syd has described in detail the visual imagery and icons symbolized on these coins by hand-engraved dies. A total of 197 varieties of small St. Patrick coins have been meticulously cataloged by him and presented in an easy-to-follow format.” Mossman went on to state that “the nine varieties of large St. Patrick coppers, identified as a separate entity, are equally well presented.” Christopher McDowell, editor of *CNL*, states that “this is the most important book on colonial numismatics to be published in many years. It is doubtful that this book will ever be surpassed in its coverage of the series. If you collect St. Patrick coinage or are interested in colonial numismatics, this book is a must-have.”

In many ways this work is a collaborative effort, helped by many collectors who shared access to their St. Patrick collections for Syd to examine and photograph. The result is the first complete and illustrated catalogue of all known varieties in the series; unlike Syd's earlier three books, this one features color photographs. Other topics covered include the manufacturing history of the coins, literary discussion of the series, a history of their circulation in America, and a fascinating Appendix that includes what Syd calls “Miscellany.” According to Phil Mossman, what Syd calls “Miscellany” is actually “well-researched inquiries into the lineage of an elusive series.” C4 is very proud to publish this book and its long association with Syd Martin.

The 528-page book is hardbound, with color illustrations throughout of the different coin varieties examined, with dust jacket. *Saint Patrick Coinage: For Ireland and New Jersey*, by Sydney F. Martin, is available for \$95 for C4 members or \$125 for nonmembers of C4, plus \$7.25 shipping from bookseller Charles Davis, (numisbook.com,) P. O. Box 1, Wenham, MA 01984, or telephone 978-468-2933.

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The Daniel Frank Sedwick database of fake cobs is now on ForgeryNetwork :  
<http://www.forgerynetwork.com/default.aspx?keyword=cob> ..  
<http://www.forgerynetwork.com/asset.aspx?id=QEjfd5ZR~x~8=>

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The Colonial Coin Collectors Club announces a 2<sup>nd</sup> printing:  
***CONTEMPORARY COUNTERFEIT HALFPENNY AND  
FARTHING FAMILIES, 2<sup>nd</sup> PRINTING***

By Roger Moore, Eugene Andrews, Robert Bowser, John Howes, John Louis, David Palmer, Jeff Rock, Rickie Rose, Clem Schettino, and Byron Weston

This monograph is the start of an effort to organize and bring structure to this area of colonial numismatics: it breaks down the vast number of different varieties into related groups called Families. A Family of contemporary counterfeits is a group of coins that likely came from the same minting operation at about the same time. Families are logical groups that share one or more of the following attributes: dies, die making punches, or similarities in the design style. This updated large format, glossy hardcover, 294 pages and profusely illustrated in color is now available for \$54.95 from Barnes & Noble, Amazon books, and other mass market retailers. Check specifically for ISBN 978-1-64255-857-9.

Comments on *Contemporary Counterfeit  
Halfpenny and Farthing Families*:

Jim Rosen, Past President, Colonial Coin  
Collectors Club, Inc.:

“Finally, a wonderful and badly needed reference book of extraordinary importance that for the first time begins the monumental task of putting order to the unorganized field of counterfeit halfpence and farthings.”

**Contemporary Counterfeit  
Halfpenny & Farthing Families**

By Roger Moore, Eugene Andrews, Robert Bowser, John Howes, John Louis,  
David Palmer, Jeff Rock, Rickie Rose, Clem Schettino, and Byron Weston



This book is the start of an effort to organize and bring structure to this area of colonial numismatics.



## FRENCH COINAGE SPECIFICALLY FOR COLONIAL AMERICA

The Colonial Coin Collectors Club, C4, released Sydney F. Martin's book, *French Coinage Specifically for Colonial America*. This is the third colonial coin book published by C4 written by Syd Martin. Other works include *The Rosa Americana Coinage of William Wood* and *The Hibernia Coinage of William Wood*. The Rosa and Hibernia books are now considered standard references for those coinages and Syd's long-awaited third book is expected to become the leading reference work on French Coinage minted for circulation in North America. According to Lou Jordan, the curator of numismatic collections for the University of Notre Dame, "Syd Martin has written the definitive catalog of French coinage authorized specifically for use in North America." Jordan went on to state that "this is an essential book for anyone interested in the French coinage of colonial North America."

"What many early American coin collectors fail to recognize," Martin said upon the book's release, "is that from the 16th century until 1763, New France included much of what is now the United States, as well as most of Canada. As such, coins minted by France for circulation in its North American colonies should be considered 'coins of the realm' in these areas." Colonial numismatic expert, John Kraljevich, went on to explain that "the history of the French in what is today the United States is largely forgotten. However, the memory of these people and their coinage has been long cherished in Canada."

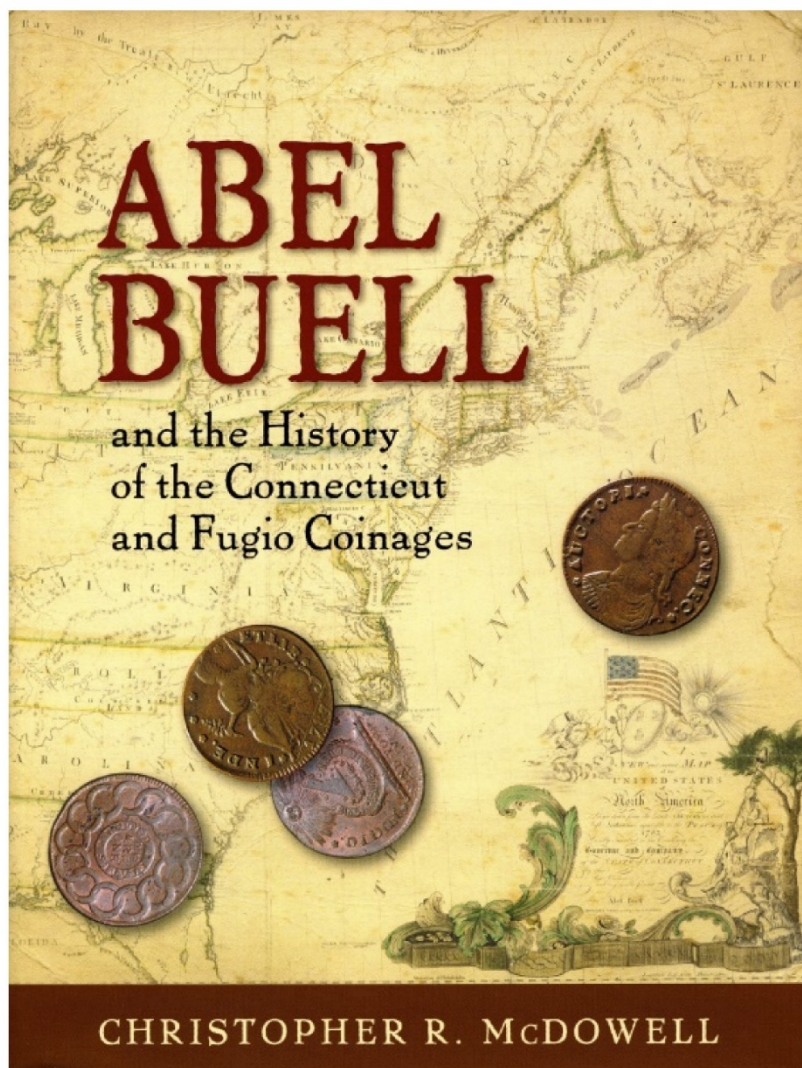
Jim Rosen, president of C4, predicted that "Martin's new book will awaken an interest in both the history of the French speaking people in North American and the coins they used such as the *Gloriam Regni* coins of 1670, the 6 and 12-denier copper coins minted in 1717, and the copper 9-denier coins from 1721 and 22, all of which were struck in France specifically for circulation in the Americas."

In the book's introduction, John Kraljevich writes that, "With Crosby-like flair, Syd has marshaled together the original documents that tell the stories of these coinages. Most have never been published at all, let alone in English or all in one place. This original research guarantees this work's importance to researchers in every forthcoming generation. The heart of this book, the die studies, offers several pathways for collectors to navigate these series, by basic type, by major variety, by die combination, or even by die state. It's a project that no one has ever even attempted before, an outlier in the world of colonial numismatics, a field that has seen multiple die studies of most of the popular series. Given Syd's well-organized approach and the thousands of coins he's studied, it may be generations before this work is supplanted. It's doubtful anyone will ever do it any better."

The 480-page book is hardbound, well-illustrated throughout with photographs of the different coin varieties examined, and with a dust jacket depicting French Coinage. The book is available for \$85.00 plus \$7.00 shipping from bookseller Charles Davis, (<http://www.numisbook.com/>), P. O. Box 1, Wenham, MA 01984, or telephone 978-468-2933.

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**Support the C4 Club education initiatives buy this book:**



**In stock from Charles Davis Numismatic Literature:**

Charles Davis  
Numismatic Literature  
PO Box 1  
Wenham, MA 01984

or by phone at (978) 468-2933  
or via email: [charlesdavis@vcoins.com](mailto:charlesdavis@vcoins.com)

## C4 Offers Important Colonial Books

For more information on the following books, published by the Colonial Coin Collectors Club (C4,) visit the C4 website at [www.colonialcoins.org](http://www.colonialcoins.org). These books may be ordered directly from: Charles Davis' website: [www.numisbook.com](http://www.numisbook.com).

(1) Howes, Jack, Rosen, James and Trudgen, Gary. *The History and Coinage of Machin's Mills*, Coin Collectors Club, 2021. Price: \$65. This title also available from Kolbe & Fanning Numismatic Booksellers. See announcement above.

(2) Jordan, Lou. *John Hull, The Mint, and The Economics of Massachusetts Coinage*, Colonial Coin Collectors Club, 2002. Price: \$10.

(3) McDowell, Christopher R., *Abel Buell and the History of the Connecticut and Fugio Coinages*, Colonial Coin Collectors Club, 2015. Price \$85.

(4) Martin, Sydney. *French Coinage Specifically for Colonial America*, Colonial Coin Collectors Club, 2016. Price \$85.

(5) Martin, Sydney. *The Hibernia Coinage of William Wood (1722-1724)*, Colonial Coin Collectors Club, 2007. Price: \$50.

(6) Martin, Sydney. *The Rosa Americana Coinage of William Wood*, Colonial Coin Collectors Club, 2012. Price \$50.

(7) Martin, Sydney. *St. Patrick Coinage for Ireland and New Jersey*, Colonial Coin Collectors Club, 2018. Price \$95.

(8) Moore, Roger, *The Coins of Colonial Virginia*, Colonial Coin Collectors Club, 2019, Price \$95.

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## PROSPECTIVE MEMBERS

In accordance with our by-laws, those who have recently joined C4 as provisional members are listed below. If any current C4 member in good standing has a reason any of the following should be denied membership in C4, please contact either your Regional VP or the President of the Club, Craig McDonald. The new provisional members are:

|                       |                   |                 |
|-----------------------|-------------------|-----------------|
| David Gerber – NY     | Tom Thatcher – VT | Matt Virga – NY |
| Lewis Heidenrich – FL | Joey Tobin – TX   |                 |

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I am in the process of researching information pertaining to the Talbot, Allum & Lee series. I am seeking assistance from C4 members who may have knowledge regarding the evolution of the series and the coins that were issued. I possess the basic series including all mules. If you have any unique or off metal pieces, or a half cent struck over a Talbot piece I would love to have access to them if possible.

Please contact Arnold Miniman at [ahminiman@gmail.com](mailto:ahminiman@gmail.com), or (201) 317-4199.

## EAC PUBLISHES ECKBERG BOOK ON HALF CENTS

On May 1, 2019 Early American Coppers (EAC) proudly announced the publication of *The Half Cent, 1793-1857: The Story of America's Greatest Little Coin*, by William R. Eckberg. EAC's second book, it is an important new reference on one of the first denominations coined by the United States of America.

This book tells the story of the half cent from its antecedents and models through its first release in 1793 to its end in 1857. Why did we ever have such a small denomination, anyway? Who made them? When were they made? How many are known of each variety? How are the coins graded today? All these questions and more are clearly addressed.

This hardcover book is 8½" x 11" and profusely illustrated in full color with high resolution photos. All business strike half cent obverses and reverses are illustrated by full color 3.5" photos.

Because of the way they were made, and because they were the money of the people, half cents have a charm and character that few other denominations can have, and this charm and interest come through clearly in the book.

Eckberg says he wrote the book because much new research about the coins' design, engraving and manufacture has been developed since the Cohen and Breen books of 35 years ago, and that has allowed him to correct a number of misconceptions about the series and other early coins of the U.S. Mint. This research, much of it by the author, has come from the study of early Mint documents and the coins themselves. His study of the early half cents' manufacture has provided important new insights into the operation of the early U.S. Mint and into how other denominations were created as well.

Dr. Harry E. Salyards, editor of *Penny-Wise*, the quarterly journal of EAC, writes:

"Until now, the half cent has lacked an author able to write in an engaging conversational style while incorporating solid research evidence. As a trained scientist and lifelong teacher, Bill Eckberg is well suited to become the first to do so. Among the literature of early American copper as a whole, we have had homey narratives littered with pseudoscience, and *ex-cathedra* pronouncements aplenty. We have also had way too much 'history' written in the past subjunctive: narratives introducing each unsupported assertion with a phrase such as, 'Surely there would have been. . .'

"You will find none of that sort of thing here. What you will find is the voice of an enthusiastic collector who has made some unexpected discoveries over the course of his thirty years' pursuit of the American half cent—a fascinating and still underappreciated series."

Every collection of U.S. coins should contain at least a few half cents. Scarcer *as a denomination* than the key Lincoln cent, the 1909-S VDB, they are truly rare coins. Yet, most half cents are remarkably affordable to the average collector. A U.S. series that is both rare and affordable? Yes! Still, most collectors only know them as type coins, if at all. This book will serve as an interesting and informative introduction to the series for those who are unfamiliar with it and will provide enough new knowledge to satisfy even the most advanced specialists.

The book is available from <http://halfcentbook.com>. The cover price is \$125, but members of EAC, Colonial Coin Collectors Club, Numismatic Bibliomania Society, and the American Numismatic Association may order it for \$95 plus shipping. For quantities of 10 or more, please contact [halfcent@icloud.com](mailto:halfcent@icloud.com).

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I need help in a project that will turn into a *C4 Newsletter* article on estimating the surviving population of State Coinages. I am developing a model but need to better understand how many NJ coppers collectors hold. Only aggregated data will be used. I am looking for information on total number of NJ coppers, number recovered (dug,) number purchased, and number sold in last 12 months or longer periods if available. I am looking for data from any size collections or accumulations.

**J. Howes;** 19967 East Doyle; Grosse Pointe Woods, MI 48236; 313-319-1743

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### **Obtaining Back Copies of C4 Newsletter and C4 Auction Catalogues**

Wayne Shelby has agreed to store the back copies of the *C4 Newsletter*. People wishing to purchase back issues that are still available should send their money to our treasurer, Charlie Rohrer, whose contact data is on page 2. Upon receipt of the money, he will contact Wayne, who will mail out the material. Back copies of the *Newsletter* are \$10 for the first and \$8 for all after that placed at the same time. If you have questions of what material is available, you can contact Wayne at:

[dughistory@juno.com](mailto:dughistory@juno.com)

609-261-6662 (Home)

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I'm currently undertaking a comprehensive study of the Castorland jeton. I'm approaching the study from both sides of the Atlantic, relying heavily on French sources, and my study entails operational details from the manufacture of flans to the mechanical workings of the screw press; the history of jetons as they evolved from arithmetical counters to monarchical presentation pieces; events leading up to the establishment of the New York Company; the biography of Benjamin Duvivier; etc. culminating in detailed descriptions of variants struck from at least one original die. As you can see it's a big work, but I've been at it quite a few years and am wonderfully engaged in the project. Here is a "finding list" of details I'm looking for, as well as photos if possible:

1. If the specimen is in a slab, all the label information.
2. Identify the metal, gold, silver, copper, bronze. If silver, indicate thin or thick planchet.
3. If edge-stamped, identify the symbol and the lettering and location of the stamping (such as 6 o'clock relative the obverse.)
4. Die alignment: coin turn/medal turn.
5. Describe state of any reverse die failure, perceptible bulge, advanced crack, etc.
6. Describe reverse caustic incursion, sometimes identified as rust, at the right handle of the vessel.
7. Describe any other identifying factors such as rim bumps, scratches, spots, unfilled letters of legends, etc. that would help identify the piece if it were re-encapsulated at some future time.
8. Indicate the provenance, if known. If you currently own the specimen, feel free to identify it ex your name for the benefit of future owners.

Please contact Chester L. Sullivan at [csull@ku.edu](mailto:csull@ku.edu).



## CLASSIFIED ADS

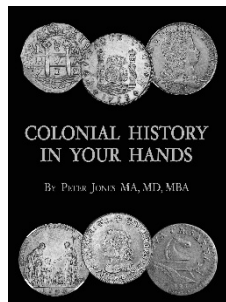
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Continental Currency, 14 January 1779, \$70, Nice AU, No Folds or Pinholes

New York Currency 16 February 1771 £5, AU with a light fold, Bold Print, Clean Note, Small repair at front bottom center. Elaborate Top Boarder.

1787 Conn. Mi-1.1a, F-15, smooth surfaces, Nice Coin in a collectible Grade, Small Head Type

1787 Conn. Mi-1.1a, VF with obv roughness, net F-15, Pleasant Looking Coin, Small Head Type

1794 Ready Reckoner, Daniel Fenning, Newburyport MA., Cover and some pages detached but all are present, contains a Coin Table.

Also, some Non Colonials (Including Coin World Tokens) For Sale, Let me know your interests.

**Call/Email for prices & pictures. [Leo\\_J\\_Shane@hotmail.com](mailto:Leo_J_Shane@hotmail.com) 215-873-1915**



1787 M 38-I.2 R4 CC? AUCIORI PCGS VF35 373.35/08508567 – 5/30,6/1/2012 Long Beach - \$910. \*\* 1787 M48-G.5 R5+ CC? PCGS VF30 370.30/33032094 - \$485. \*\* 1786 M 5.1-H.1 R6 133.4 gns XXXs Rev, Clip obv. - blue 2x2 w coin+Craige Env. Stacks 6/13 #45 - \$ 1075. \*\* 1787 M 36- L.1 R5+ 139.6 gns Obv Hi Cheek Stria - Rev Some Spotting – Craige Env from Cyril Howley, Stacks 6/2013 #97 - 3x3 clear auction flip - \$220 \*\* 1787 M37.13-HH R5 Stacks 1/13 #11249 - blue 2x2 w/coin + TED CRAIGE / STACKS 12/14/63 ENV - \$215 \*\* 1787 M38-GG AUCIORI R4 - blue 2x2 wcoin + TED CRAIGE Env, Stacks 1/2013 #11252 - \$220 \*\* Raw M 32.4 - X.5 - dark, double clip, rot. rev. - dateless - off center - R5+ - 106.3gns. - \$200 \*\* RAW M 26-KK 1 – ET LIB -- R5 LDS Rev - \$175 \*\* Raw M32.5-aa INDE/FUDE - R4 - 10-11 O/C CLIP - \$145 \*\* Raw M31.1-gg.1 – ET LIR R3 - Fine - \$165  
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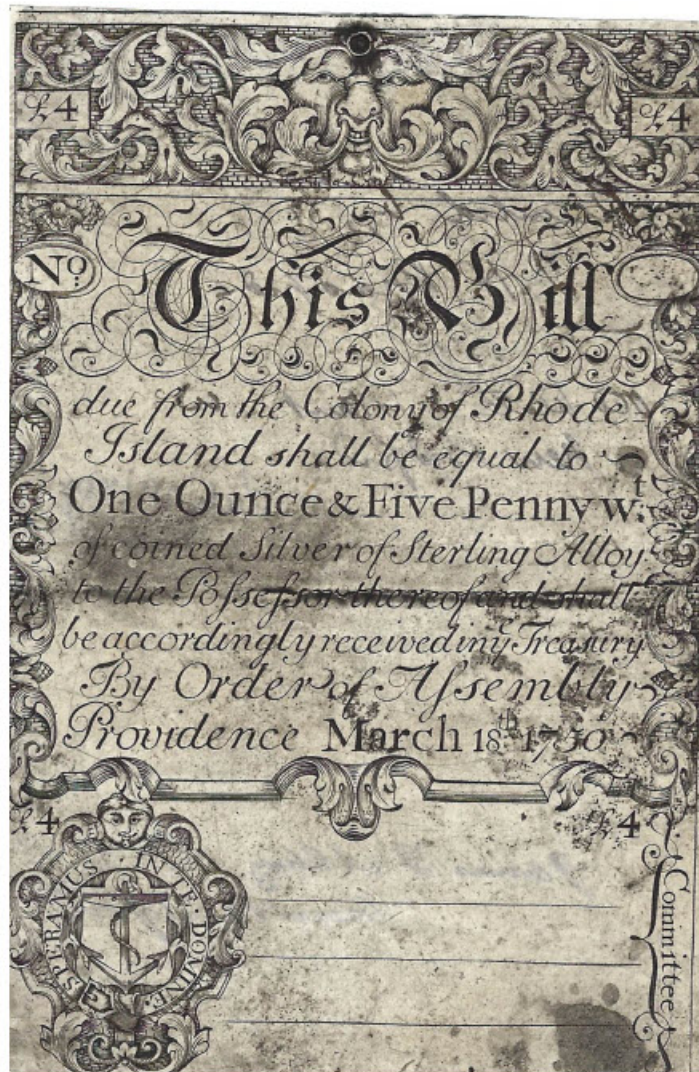


Figure 1, Back

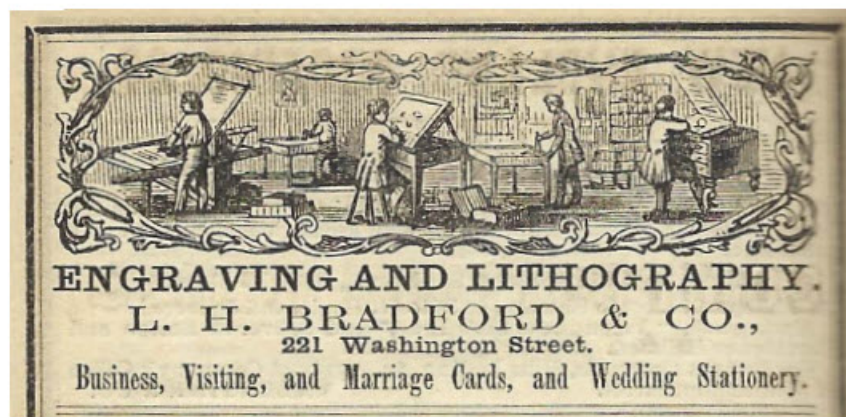


Figure 2

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